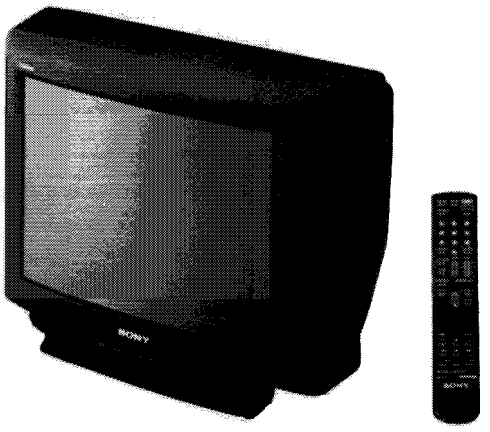
KV-20V50
RM-Y117

SERVICEMANUAL

US Model
Chassis No. SCC-F78F-A
Canadian Model
Chassis No. SCC-F79E-A



RM-Y117

BA-1 CHASSIS

MODELS OF THE SAME SERIES	
KV-20V50	KV-20TR23/2160WR/2150R
KV-13TR28/13TR29 KV-1430R/1440WR	KV-20TS29/20TS32 KV-21STR2/2170RS

SPECIFICATIONS

Television system	American TV standards
Channel coverage	VHF: 2-13 UHF: 14-69 CABLE TV: 1-125
Picture tube	Hi-Black Trinitron® tube 20-inch picture measured diagonally 21-inch picture tube measured diagonally
Antenna	75 ohm external antenna terminal for VHF/UHF
Input	VIDEO AND S VIDEO S VIDEO IN (S terminal) Y: 1 Vp-p, 75-ohms unbalanced, sync negative C: 0.286 Vp-p (Burst signal) 75-ohms Video (phono jacks) : 1 Vp-p, 75-ohms unbalanced, sync negative Audio (phono jacks) : 500 mVrms (100% modulation) Impedance : 47 kilo-ohms
Speaker output	3W×2 (4 ohms)
Speaker size	Full range 80 mm (3 1/4 in.)×2 units
Audio frequency response	50Hz-20kHz
Power requirements	120 V AC, 60Hz
Power consumption	120W
Standby mode	4 w
Dimensions (w/h/d)	550X464.7X471.3 mm (21 3/4 X 18 3/8 X 185/s inches)
Weight	24.0 kg (52 lbs 15 oz)
Supplied accessories	Remote Commander RM-Y117 (1) with 1 size AA (R6) EVEREADY batteries
Recommended accessories	U/V mixer EAC-66 Connecting cable VMC-810S/820S, VMC-720M YC-15V/30V, RK-74A

Design and specifications are subject to change without notice.

MICROFILM

TRINITRON® COLOR TV
SONY®

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WARNING!!

AN ISOLATIONTRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, -BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHASSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DETOUT DÉPANNAGE. LE CHÁSSIS DECE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ A L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS ALA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MAPQUE A SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES CONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTSSONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT

(US Model only)

Aftercorrectingtheoriginal service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.

2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.

3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.

4. Look for unauthorizedreplacement parts, particularly transistors, that were installed during a previous repair Point them out to the customer and recommend their replacement.

5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.

8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.

9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a coldwater pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60- 100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

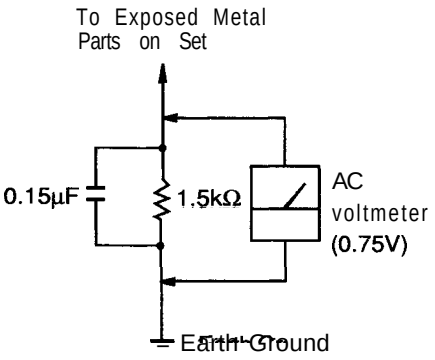


Fig. A. Using an AC voltmeter to check AC leakage.

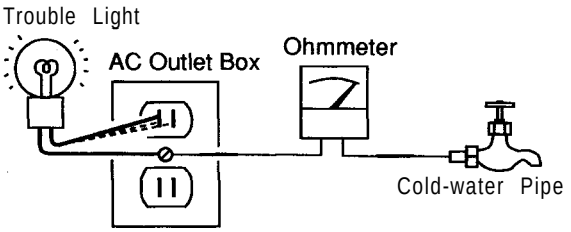


Fig. B. Checking for earth ground.

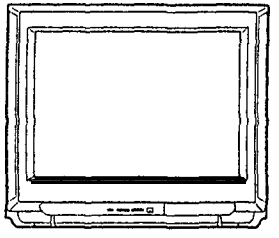
SECTION 1
GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remein as in the manual.

1-1. INTRODUCTING THE SONY TRINITRON® COLOR TV

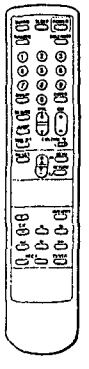
Design

KV-20V50



Supplied Remote Commander

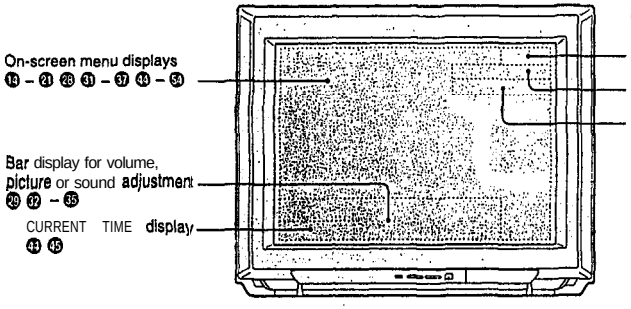
RM-Y117

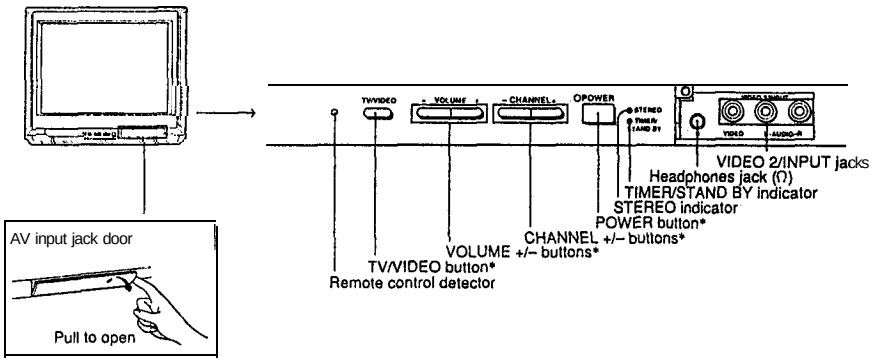


1-2. LOCATING THE CONTROLS

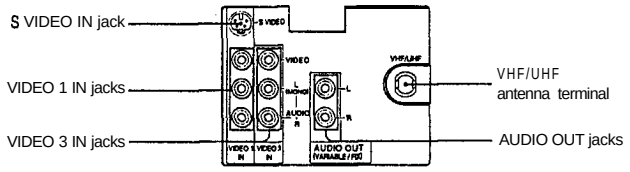
Screen Displays

For details, see the pages indicated by the numbered black circles ●.


On-screen menu displays
⓭ – ㉑ ㉘ ㉛ – ㊲ ㊹ – ㊹
Bar display for volume, picture or sound adjustment
㉙ ㉜ – ㉟
CURRENT TIME display
㊸ ㊺
Channel number display
Main picture input mode
SLEEP, MUTING displays ㊵
CHANNEL CAPTION display
㊿ – ㊿
MTS mode (MAIN, SAP or MONO) ㊻



* Buttons with the same function are also located on the Remote Commander (pp. 9 – 11).



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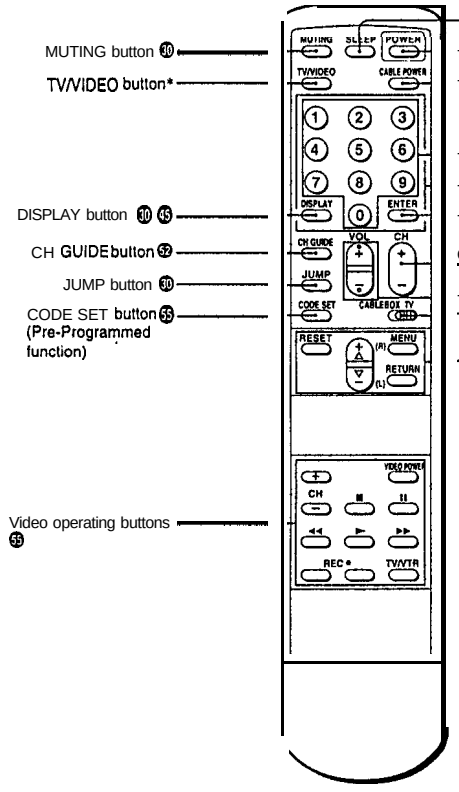
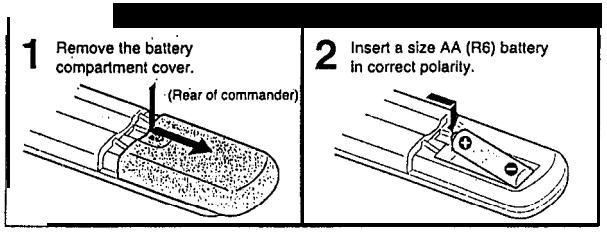


• Buttons with the same function are also located on the TV (p. 7).

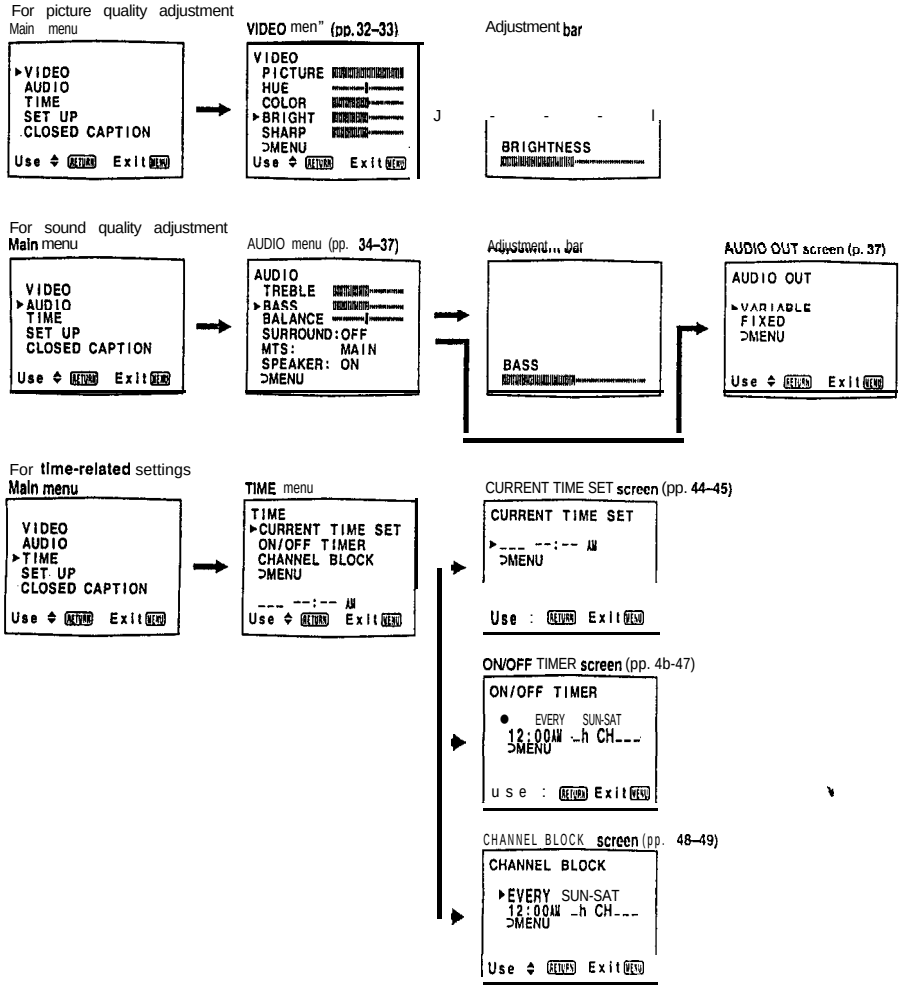


Note

If the CABLEBOX-TV selector is set to CABLEBOX, the Remote Commander is able to control a connected cable box, not the TV. Set the selector to TV to control the TV set with the Remote Commander (You can use POWER button at any case).

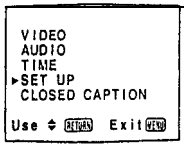
1-3. USING THE ON-SCREEN MENUS

The following flow chart shows the different levels of on-screen menus that you can use to make various adjustments and settings. See the indicated pages for instructions on using each feature.

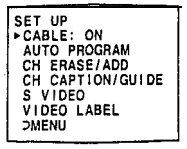


For presetting and other functions

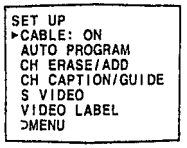
Main menu



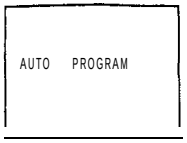
SET UP menu



CABLE ON/OFF screen (p. 17)

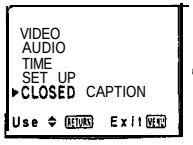


AUTO PROGRAM screen (P. 18)

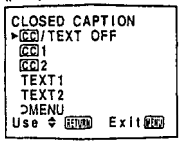


For closed caption setting

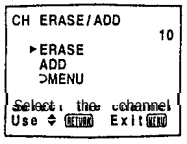
Main menu



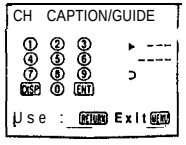
CLOSED CAPTION screen (p. 31)



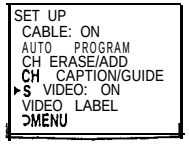
CHANNEL ERASE/ADD screen (pp. 14-21)



CHANNEL CAPTION/GUIDE screen (pp. 50–51)



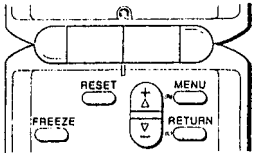
S VIDEO ON/OFF screen (p. 28)



VIDEO LABEL screen (pp. 53–54)

Navigating through the Menus

Remote Commander



To display the main menu
Press MENU.

To return to the previous me""
Press At or V-to select "↩ MENU."
Then press RETURN.

To return to the main menu
Repeat the above, until you reach the main menu.

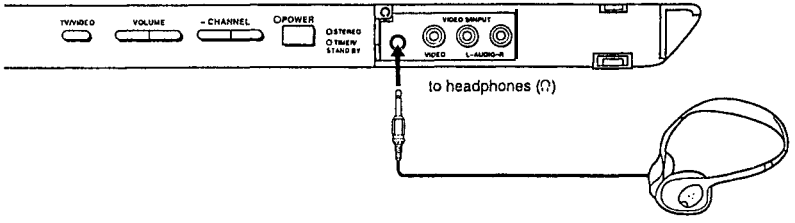
To return to tho normal screen
Press MENU on the Remote Commander.

Note

The menus disappear automatically if you do not press a button within 90 seconds.
The menu you cannot select appears in black.

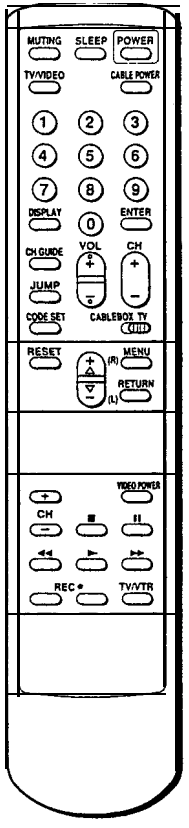
14. CONNECTING OTHER EQUIPMENT

Connecting Headphones



Note

To prevent hearing damage due to sudden or prolonged excessive volume, do not raise the headphones volume too high while listening.



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To return to the normal screen
Press MENU.

Note

If you set S VIDEO to ON, the TV automatically receives S video signals whenever a VCR with S video is connected

Watching a Video with Your S Video-Equipped VCR

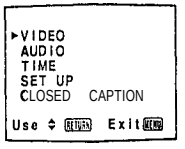
Use this feature to set S VIDEO to ON or OFF depending on the kind of video equipment you have connected to the N. For instructions on connecting video equipment, see pp. 22-25.

Note

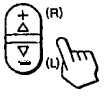
If the N is in TV. VIDEO 2 or VIDEO 3 mode. the S VIDEO display appears in black and cannot be selected.
Press TV/VIDEO to change lo VIDEO 1 mode.

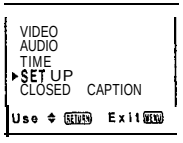
1 Press MENU.
The main menu appears.

MENU



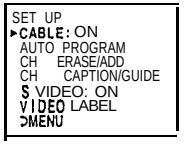
2 Press A+ or V-to select SET UP



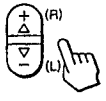


Press RETURN.
The SET UP men" appears.

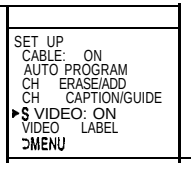
RETURN



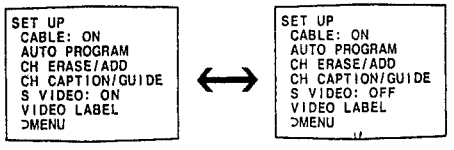
3 Press Δ+ or ∇– to select S VIDEO.
Then press RETURN.



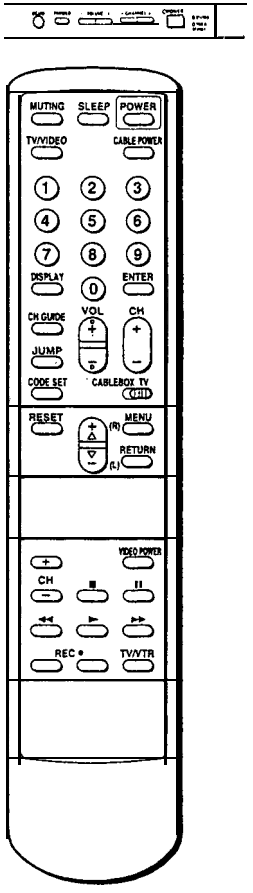
RETURN



Press A+ or V- to select ON or OFF alternately



Press RETURN.
The selling is completed.



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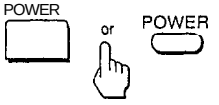
1-5. WATCHING TV PROGRAMS

1 Press POWER on the TV or the Remote Commander to turn the TV on.
The TIMER/STAND BY indicator blinks until the picture appears,

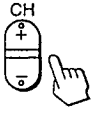


2 Turn the cable mode on or off lo select the type of channel you want to watch. VHF/UHF or cable N.
(Follow the steps in "Turning the Cable Mode On or Off," p. 17.)

If "VIDEO" or 3 VIDEO' is displayed an the screen. press the TV or TV/VIDEO button so that the channel number appears.

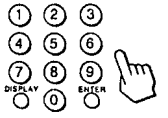
3 Selects channel in one of the following two ways:

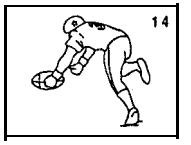
To scan the preset channels* in numerical sequence
Press CH +/–.



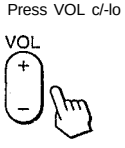
* For more information on presetting channels. see pp: 18–21.

To select a channel directly
Press 0 – 9 and ENTER.
For example, to select channel 14, press 1, 4 and ENTER.

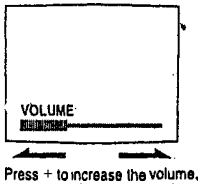




4 Press VOL c/-lo adjust the volume.



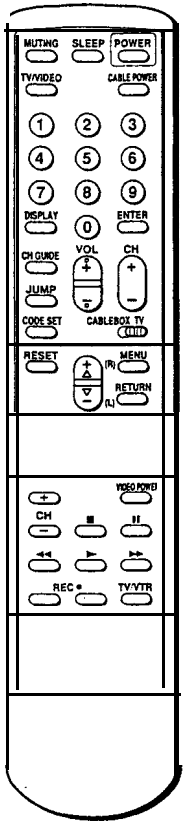
The display will disappear automatically after 3 seconds.



Press + to increase the volume.
Press – to decrease the volume.

To turn off the N
Press POWER on the TV or the Remote Commander again.

1-6. USING CONVENIENT FEATURES



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Muting the Sound—MUTING

Press MUTING.
The display "MUTING" will appear on the screen.

MUTING

To restore the sound
Press MUTING again. or press VOL +.

Keeping the Displays On-Screen—DISPLAY

To display the channel
Press DISPLAY.
All the existing displays appear: channel number, channel caption (if set), MTS mode ("SAP" only), window picture input mode and the current rime ('AM' or 'PM' disappears after about three seconds).

DISPLAY

To cancel the display
Press DISPLAY again.
The channel display will disappear.

Using the Sleep Timer—SLEEP

The sleep timer turns off the TV automatically after the amount of time you select.

Press SLEEP.
Each time you press SLEEP, the lime increments "30", "60", "90" and "OFF" mode appear in sequence.

SLEEP

SLEEP 30
SLEEP 60
SLEEP 90
SLEEP OFF

The SLEEP display appears about one minute before the TV turns off.

To cancel the setting
Press SLEEP until "OFF" mode appears.
The "SLEEP OFF" display appears for about three seconds.
O R
Turn the TV off.
The sleep limer selling is cancelled.

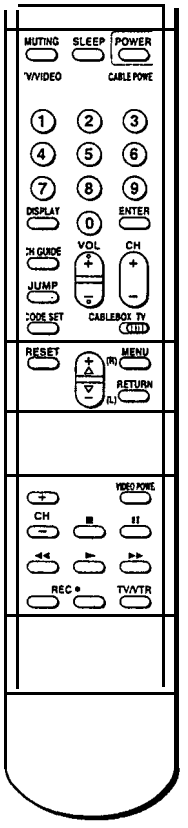
Switching Quickly Between Two Channels—JUMP

Press JUMP once to recall the channel you were watching previously. Press JUMP again to switch back. Use this feature lo keep track of lwo programs alternately.

JUMP

8

1-7. USING CLOSED CAPTION



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1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use :  RETURN Exit MENU
```

2 Press A+ or V- lo select CLOSED CAPTION.
Then press RETURN.
The CLOSED CAPTION screen appears.

(R) (L)

RETURN

```
CLOSED CAPTION
▸CC/TEXT OFF
 CC1
 CC2
 TEXT1
 TEXT2
 3MENU
Use ↕ RETURN Exit MENU
```

3 Press A+ or V- lo select closed caption mode.

(R) (L)

Select CC1 or CC2 to view Captions. A Caption is a printed version of the dialogue or sound effects of a program. (The mode should be set to CC1 for most programs.)

```
CLOSED CAPTION
 CC/TEXT OFF
▸CC1
 CC2
 TEXT1
 TEXT2
 3MENU
Use : RETURN Exit MENU
```

Select TEXT1 or TEXT2 lo view Text. Text is information that is presented using the hall to lull television screen. It is usually not related lo the program.

```
CLOSED CAPTION
 CC/TEXT OFF
 CC1
 CC2
▸TEXT1
 TEXT2
 3MENU
Use : RETURN Exit MENU
```

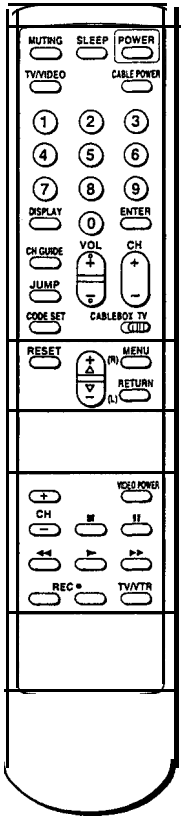
Select CC/TEXT OFF if you do not want lo use the CLOSED CAPTION mode.

```
CLOSED CAPTION
▸CC/TEXT OFF
 CC1
 CC2
 TEXT1
 TEXT2
 3MENU
Use↕ RETURN Exit MENU
```

Press RETURN.
The selling is completed.

RETURN

I-8. ADJUSTING PICTURE AND SOUND QUALITY



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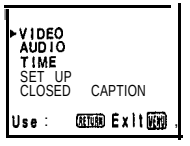
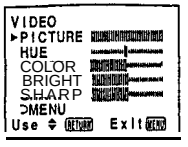
Adjusting the Picture

You can adjust the picture (and sound. pp. 34-37) for each input mode (TV, VIDEO 1, VIDEO 2. VIDEO 3) by pressing TV/VIDEO on the N or on the Remote Commander to select the input mode before making the adjustmenls. These adjustments are retained in memory even when you turn off the TV until you change the adjustments again.

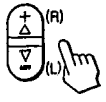
1 Press MENU.
The *main* menu *appears,* and *the cursor points to "VIDEO".*

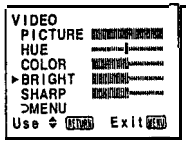


2 Press RETURN.
The VIDEO men" appears.



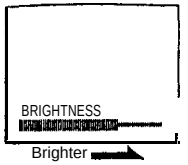
3 Press A+ or V- to select the item you want to adjust.
For example. lo adjust the picture brightness, select BRIGHT.

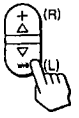


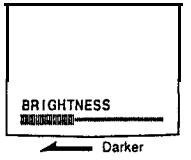


Press RETURN.
The *adjustment bar appears.*

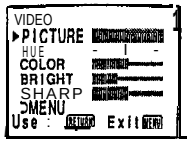
4 Press At or V-lo make the adjustment.







Press RETURN.
The new setting appears in the VIDEO menu.



To adjust other items
Repeal steps 3–4.

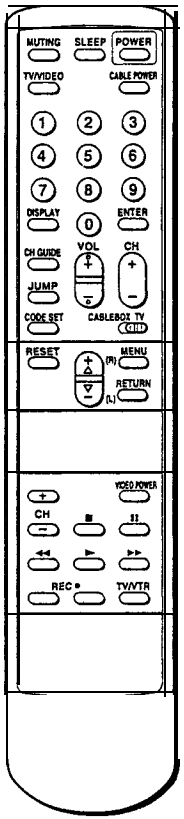
	Press ▽- to:	Press △+ to:
PICTURE	decrease piclure contrast with soft color	Increase piclure contrast with vivid color
HUE	make skin tones become purplish	make skin tones become greenish
COLOR	decrease color intensity	increase color intensity
BRIGHTNESS	darken the picture	brighten the picture
SHARPNESS	soften the picture	sharpen the picture

The menus and adjustment bars will disappear automatically after 90 seconds if you do not press any other buttons during that lime.

To return to the normal screen
Press MENU.

To restore the **factory (mid-level)** selling
Go to the VIDEO menu and press RESET.
All **the settings except for** PICTURE will be **restored to** the mid-level setting.

— 10 —



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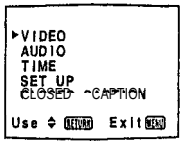
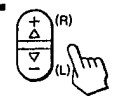
Adjusting the Sound (except for KV-13V50)

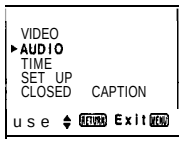
1 Press MENU.
The main menu appears.

MENU



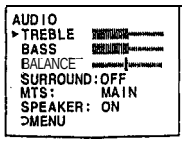
2 Press A+ or V- lo select AUDIO.



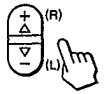


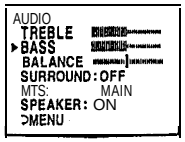
Press RETURN.
The AUDIO me"" appears.

RETURN



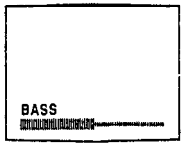
3 Press A+ or V-lo select the sound quality (TREBLE, BASS or BALANCE) that you want to adjust. For example. to adjust the bass response, select BASS.



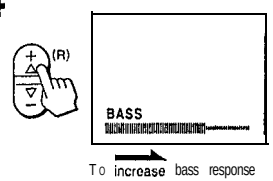


Press RETURN.
*The **adjustment** bar appears.*

RETURN



4 Press A+ or ∇– to make the adjustment.



To increase bass response

To decrease bass response

Press RETURN,
The new selling will appear in *the AUDIO* menu.

RETURN

8

To adjust **other items**
Repeat steps 3-4.

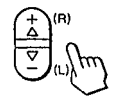
	Press ∇– to:	Press Δ+ to:
TREBLE	decrease the treble response	increase the treble response
BASS	decrease the bass response	increase the bass response
BALANCE	emphasize the left speaker's volume	emphasize the right speaker's volume

The menus and adjustment bars will disappear automatically after 90 seconds if you do not press any buttons during that time.

Listening to surround sound-SURROUND

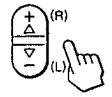
1-2 (Follow steps 1–2 in 'Adjusting the Sound". p. 34.)

3 Press Δ+ or ∇– to select SURROUND.
Then press RETURN.

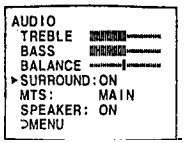


RETURN

4 Press Δ+ or ∇– to select ON or OFF modes alternately.
Then press RETURN.



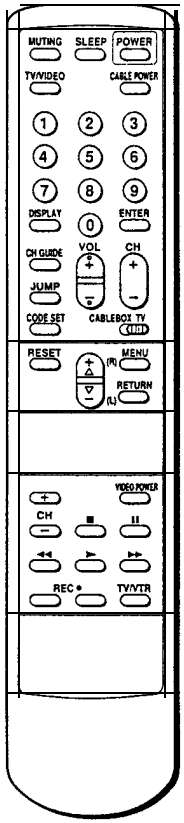
RETURN



TO **restore the factory (mid-level) settings**
Go to the AUDIO men" and press RESET,
The settings for MTS and SPEAKER will no, be affected (pp. 36–37).

To **return to the normal screen**
Press MENU.

SURROUND gives sound reproduction with the atmosphere of a movie theater or a concert *hall.*



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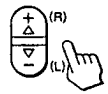
Receiving Multichannel TV Sound programs-MTS

1-2 (Follow steps 1-2 in "Adjusting the Sound." p. 34.)

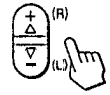
3 Press Δ+ or ∇– to select MTS.
Then press RETURN.

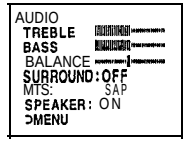
4 Press A+ or V- lo select MAIN, SAP or MONO modes alternately.

Select the MAIN mode to listen to STEREO sound.
The STEREO indicator on the TV will light up whenever a stereo broadcast is received.



Select the SAP mode to listen to Second Audio Programs.

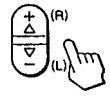




Note

During SAP mode, the sound of non-SAP programs will be muted.

Select the MONO mode to eliminate excessive noise during stereo broadcasts, caused by a weak signal.



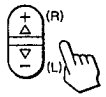
5 Press RETURN.
The mode is selected.

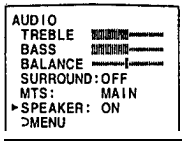
Turning the speaker on or off

Use this feature to turn the TV speaker off when you connect an audio system (p. 26-27).

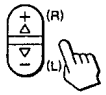
1-2 (Follow steps I-2 in 'Adjusting the Sound," p. 34.)

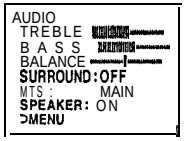
3 Press Δ+ or ∇– to select SPEAKER.
Then press RETURN.





4 Press A+ or V- to select ON or OFF modes alternately.

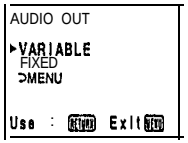




If you select ON mode:
The setting is completed.

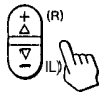
If you select OFF mode: (except for KV-13V50)

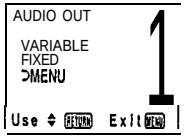
1 Press RETURN.
The AUDIO OUT menu appears.



2 Press A+ or V-lo select VARIABLE or FIXED.

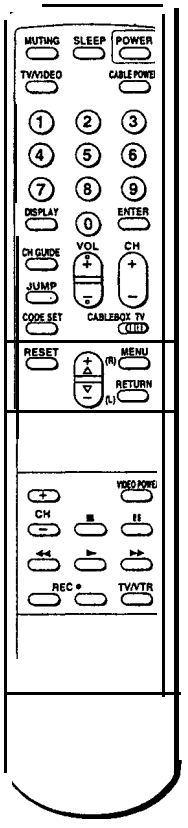
VARIABLE: Sound output varies according to the TV volume.
FIXED : Sound output is always invariable.





To return to the normal screen
Press MENU.

1-9. USING THE TIMER-ACTIVATED FUNCTIONS



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Setting the Clock—CURRENT TIME SET

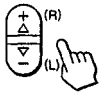
Follow these instructions to set the current time. The correct time must be set in order to use the timer-activated functions (ON/OFF TIMER, CHANNEL BLOCK).

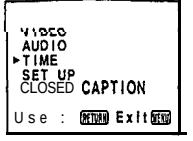
EXAMPLE: Set the lime to 3:15 PM, Monday.

1 Press MENU.
The main menu appears.

MENU

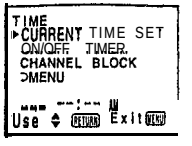
2 Press A+ or V- lo select TIME.





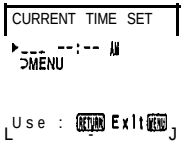
Press RETURN..
The TIME menu appears, and the cursor points to "CURRENT TIME SET".

RETURN



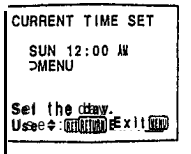
3 Press RETURN.
The CURRENT TIME SET screen appears.

RETURN

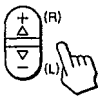


4 Press RETURN again.
"Set the day." appears on the screen.

RETURN

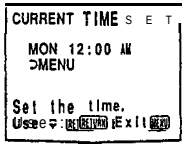


5 Press Δ+ or ∇– to set the day.
Each time you press Δ+ or ∇–, the day changes consecutively.

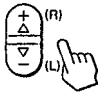


Press RETURN.
"Set the time." appears on the screen.

RETURN

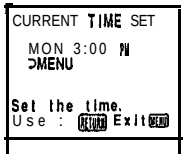


6 Press Δ+ or ∇– to set the hour.
Each time you press Δ+ or ∇–, the hour changes starting with "12:00 AM."

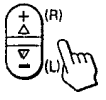


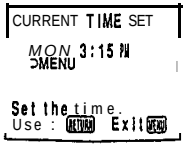
Press RETURN.

RETURN



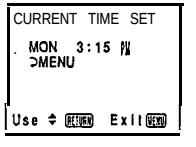
7 Press A+ or V-lo set the minutes.
Each lime *you* press *Δ+ or V –, the minutes change in sequence.*





Press RETURN.
The selling is *completed, and* the clock *starts.*

RETURN



To reset *the* time
Press RESET while in the CURRENT TIME screen. and repeal steps 4-i'.

To display the lime
Press DISPLAY.

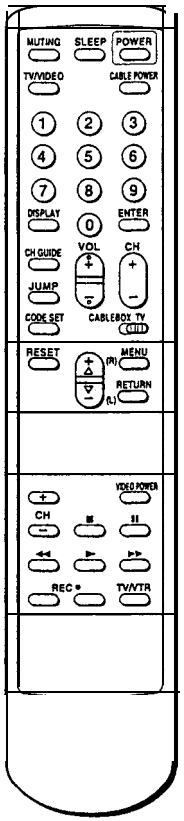
To return to the normal screen
Press MENU.

Notes

- The internal clock of this TV operates on a 12-hour cycle. II a 24-hour cycle number (for instance. 13:00) is entered, it will be cleared when you press RETURN.

  12:00 AM stands for midnight.
  12:00 PM stands for noon.

- All the settings including CURRENT TIME SET will be erased if you unplug the TV or a power failure occurs. Reset the current lime by following steps 1-7.



RM-Y117

Setting the ON/OFF TIMER

With this function you can set your favorite program to appear on the screen at the time that you set.

EXAMPLE: Sel the timer to turn on the TV every Monday through Friday al 3:15 PM for 2 hours, on channel 21.

1 Press MENU.
The main menu appears.

MENU

```
▸VIDEO
 AUDIO
 TIME
 SET UP
 CLOSED CAPTION
Use ≑ RETURN Exit MENU
```

2 Press Δ+ or ∇– to select TIME.
Then press RETURN.
The TIME menu appears.

(R) (L) RETURN

```
TIME
▸CURRENT TIME SET
 ON/OFF TIMER
 CHANNEL BLOCK
 >MENU
 MON 3:15 PM
Use ≑ RETURN Exit MENU
```

3 Press A+ or V- to select ON/OFF TIMER.
Then press RETURN.
The ON/OFF TIMER screen appears.

(R) (L) RETURN

```
ON/OFF TIMER
▸EVERY SUN-SAT
 12:00AM –h CH---
 >MENU
Use ≑ RETURN Exit MENU
```

Note

If the ON/OFF TIMER display appears in black. the current time has not bee" se, and you cannot select ON/OFF TIMER. To set the clock. see "Setting the Clock-CURRENT TIME SET", pp. 44-45.

4 Press RETURN again.
"Se! *the day." appears on the screen.*

RETURN

```
ON/OFF TIMER
 EVERY SUN-SAT
 12:00AM –h CH---
 >MENU
Set the day.
Use ≑ RETURN Exit MENU
```

5 Press A+ or V- lo set the day.
Each time you press Δ+ or V-, the days of the week change as shown in Fig.1.
Then press RETURN.
"Set the time." appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER
 EVERY MON-FRI
 12:00AM –h CH---
 >MENU
Set the time.
Use ≑ RETURN Exit MENU
```

6 Press A+ or V-to set the hour that you want the TIMER lo start.
Each time you press Δ+ or V –, the hour changes in sequence.
Then press RETURN.

(R) (L) RETURN

```
ON/OFF TIMER
 EVERY YON-FRI
 3:00PM –h CH---
 >MENU
Set the time.
Use ≑ RETURN Exit MENU
```

7 Press A+ or V- to set the minutes.
Each time you press Δ+ or ∇–, the minutes change in sequence.
Then press RETURN.
"Set the duration." appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER
 EVERY MON-FRI
 3:15PM –h CH---
 >MENU
Set the duration.
Use ≑ RETURN Exit MENU
```

8 Press A+ or V- to set the duration of time.
Each time you press Δ+ or V –, the duration changes from "1" to "6" in sequence.
Then press RETURN.
"Select the channel" appears on the screen.

(R) (L) RETURN

```
ON/OFF TIMER
 EVERY MON-FRI
 3:15PM 2h CH---
 >MENU
Select the channel
Use ≑ RETURN Exit MENU
```

9 Press A+ or V-to set the channel that you want the TV to tune in.
Each rime you press Δ+ or ∇–, the channel number changes from 1 lo 125 in sequence.

(R) (L)

```
ON/OFF TIMER
 EVERY MON-FRI
 3:15PM 2h CH 21
 >MENU
Select the channel
Use ≑ RETURN Exit MENU
```

Press RETURN.
The setting is completed, and the TIMER indicator on the front of the TV lights up.

RETURN

```
ON/OFF TIMER
▸EVERY MON-FRI
 3:15PM 2h CH 21
 >MENU
Use ≑ RETURN Exit MENU
```

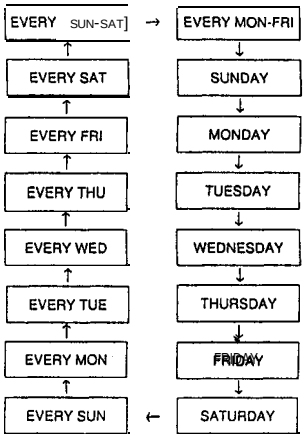
To clear the ON/OFF TIMER setting
Press RESET white in the ON/OFF TIMER screen.

To return to the normal screen
Press MENU.

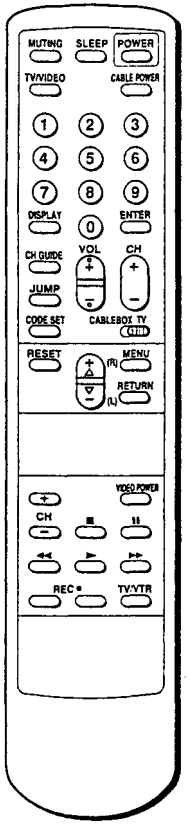
Notes

- While the TIMER is set, the TIMER indicator on the TV is on.
- One minute before the timer goes off, the 'TV will turn off" display will appear on the screen.
- All the settings including ON/OFF TIMER will be erased if you unplug the TV or a power failure occurs. Reset the ON/OFF TIMER by following steps 1-9.
- If you have not set the clock correctly, the ON, OFF TIMER wilt not operate at the proper lime. To set the clock. see 'Setting the Clock–CURRENT TIME SET'. pp. 44–45.

Fig. 1
Selecting the day(s) of the week
When you press Δ+, the days of the week appear in the following order.



(V-: reverse order)



RM-Y117

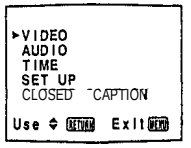
Setting CHANNEL BLOCK

Use this function lo block a channel from appearing on the screen during the time you specify. You can use this function to prevent children from watching undesirable programs.

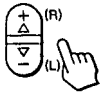
EXAMPLE: Set CHANNEL BLOCK every Sunday al 8:45 PM for one hour. on channel 38.

1 Press MENU.
The *main* me"" appears.

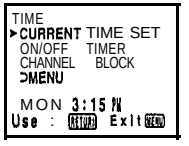
MENU



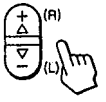
2 Press Δ+ or ∇– to select TIME.
Then press RETURN.
The TIME menu appears.



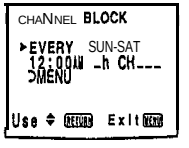
RETURN



3 Press A+ or V- lo select CHANNEL BLOCK.
Then press RETURN.
The CHANNEL BLOCK screen appears.



RETURN



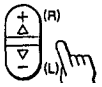
Note

If the CHANNEL BLOCK display appears in black, the current time has not been set and you cannot select CHANNEL BLOCK,. To se, the clock. see "Selling the Clock-CURRENT TIME SET", pp. 44-45.

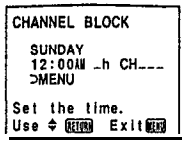
4 Press RETURN again.
"Set the day." appears on the screen.

RETURN

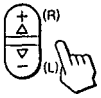
5 Press A+ or V-lo set the day.
Each time you press Δ+ or V-. the days of the week change as shown in Fig. 1.(See p. 47.)
Then press RETURN.
"Set the time." appears on the screen.



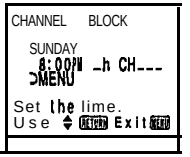
RETURN



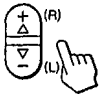
6 Press A+ or ∇– lo set the hour.
Each rime you press Δ+ or V-. the hour changes in sequence.
Then press RETURN.



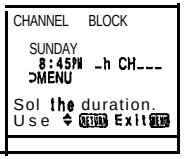
RETURN



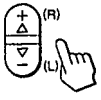
7 Press A+ or V- lo set the minutes.
Each lime you press Δ+ or V-. the minutes change in sequence.
Then press RETURN.
"Set the duration." appears on the screen.



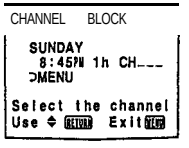
RETURN



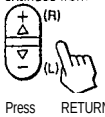
8 Press A+ or V-lo set the duration of lime that you want the TV remain blocked.
Each lime you press Δ+ or V-. the duration changes from 1 to 6 in sequence.
Then press RETURN.
"Select the channel" appears on the Screen.



RETURN

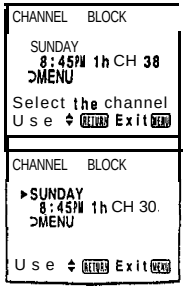


9 Press A+ or V- lo set the channel that you want to block.
Each time you press Δ+ orp-, the channel number changes from I lo 125 in sequence.

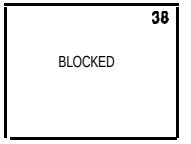


Press RETURN.
The setting is completed.

RETURN



If you select a channel which has been blocked. the message of 'BLOCKED' appears.



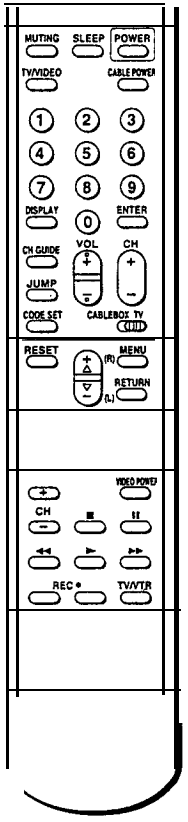
To clear the BLOCK setting
Press RESET while in the CHANNEL BLOCK screen.

To return to the normal screen
Press MENU.

Notes

. If you set a new CHANNEL BLOCK by following steps 1-9, the original selling will be erased.
. Il you have not set the clock correctly. CHANNEL BLOCK will not operate al the proper time. To set the clock, see 'Selling the Clock-CURRENT TIME SET. pp. 44-45.

I-10. CUSTOMIZING THE SCREEN DISPLAY



RM-Y117

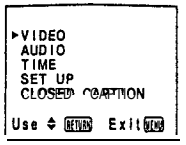
Setting Channel Captions—CH CAPTION

Use this feature to caption up to 12 channel number displays with the matching channel call letters.

EXAMPLE: Caption channel 20 with ESPN at the caption position number 4.

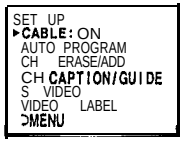
1 Press MENU.
The main *menu appears.*

MENU



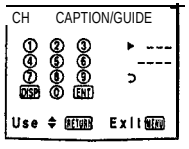
2 Press A+ or V- to select SET UP.
Then press RETURN.
The SET UP menu appears.

(R) (L) RETURN



3 Press A+ or V- to select CH CAPTION/GUIDE.
Then press RETURN.
The CH CAPTION/GUIDE screen appears.

(R) (L) RETURN

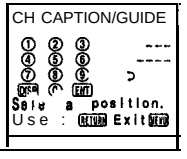


Note

If the CH CAPTION display appears in black, the TV is in video mode and you cannot select CH CAPTION/GUIDE. Press TV or TV/VIDEO to change to TV mode.

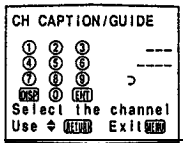
4 Press RETURN again.
"Select a position." appears on the screen.

RETURN



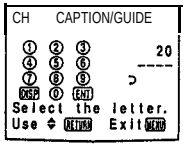
5 Press A+ or V- to select a caption position number.
Each time you press A+ or V-, the caption position number is marked in sequence.
Then press RETURN.
"Select the channel" appears on the screen.

(R) (L) RETURN



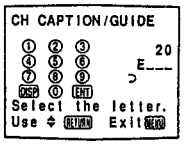
6 Press A+ or V- to select the channel you want to caption.
Each time you press A+ or V-, the channel number changes from 1 to 125.
Then press RETURN.
"Select the letter." appears on the screen.

(R) (L) RETURN



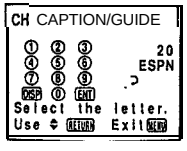
7 Press A+ or V– to select the first letter.
Each time you press A+ or V–, "0-9", "A-Z", "&", "/", "–" and "_(blank space)" appear in sequence.
Then press RETURN.

(R) (L) RETURN



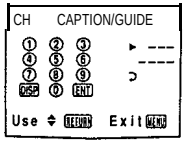
8 Repeat step 7 to select each remaining letter.
(For a J-letter caption, leave a space by pressing RETURN only.)

(R) (L) RETURN



9 Press RETURN.
The setting is completed.

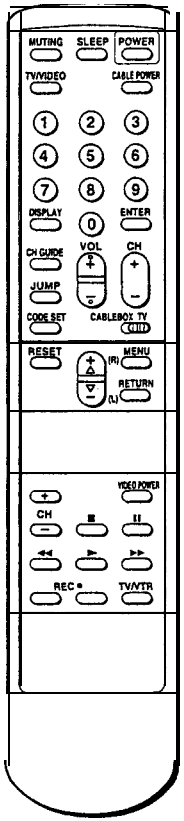
RETURN



To caption other channels
Repeat steps 4–9.

To erase unneeded captions
Call the caption setting screen by following steps 1–5, and press RESET.

To return to the normal screen
Press MENU.



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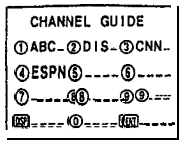
Viewing the Captioned Channels—CH GUIDE

Use this feature to display the captions you se!, end to select a channel directory for viewing.

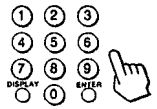
1 Press CH GUIDE.
A directory appears, corresponding lo the directory keys on the Remote Commander.

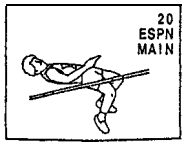
CH GUIDE

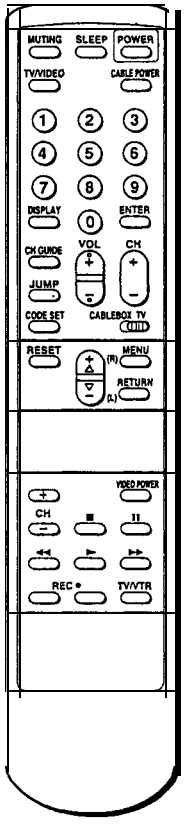


To cancel the CHANNEL GUIDE screen
Press CH GUIDE again.

2 Press the directory key of the channel you want to watch.







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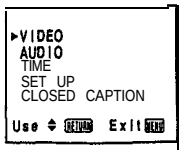
Setting VIDEO LABEL (except for KV-13V50)

Use this feature to label each input mode in order lo identify the equipment connected lo each input terminal.

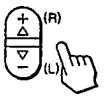
EXAMPLE: Label VIDEO 1 IN as VHS.

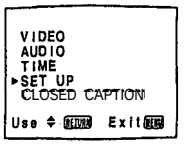
1 Press MENU.
The main menu appears.

MENU



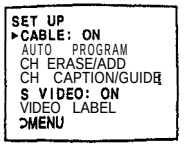
2 Press A+ or V- to select SET UP.



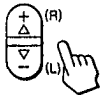


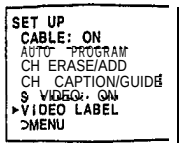
Press RETURN.
The SETUP menu appears.

RETURN



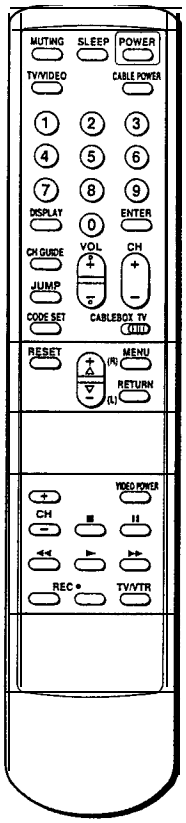
3 Press A+ or V- lo select VIDEO LABEL.





Press RETURN.
The VIDEO LABEL screen appears.

RETURN



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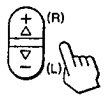
To return to the normal screen
Press MENU.

4 Press A+ or V- lo select the input mode you want to label

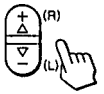


Press RETURN

RETURN

8

5 Press A+ or V-to select VHS



Each time you press A+, the label changes:

VIDEO 1
VIDEO 1 → S VIDEO+ BETA → 8 mm → VHS → LD

VIDEO 2
VIDEO 2 → BETA → 8 mm → VHS → LD

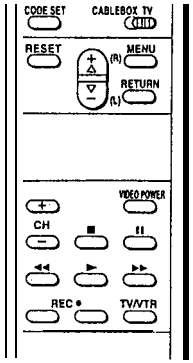
VIDEO 3
VIDEO 3 → BETA → 8 mm → VHS → LD

(▽–: reverse order)

Press RETURN.

RETURN

To label other input modes
Repeat steps 4-5.



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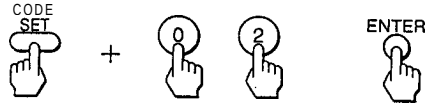
1-11. USING THE PRE-PROGRAMMED REMOTE COMMANDER

You can operate your video equipment and cable converter box that has an infrared remote detector with this supplied preprogrammed Remote Commander.

Operating Sony or Non-Sony Video Equipment—Pre-Programmed Function

With the supplied Remote Commander, you can operate a Sony video cassette recorder (Beta, 6 mm, VHS) or a muiti disc player as well as most non-Sony video equipment connected to your TV by following the steps below.

1 While pressing CODE SET, press 0 • 9 to enter the manufacturer's code number (see chart on p. 56). For example, to Operate a Sony 6 mm VCR, press 0, 2 and ENTER.



2 Use the video operating buttons on the Remote Commander to operate the video equipment.

operating a VCR	
To turn on or off	Press (VIDEO) POWER.
To change channels (when watching TV programs through the VCR's tuner)	Press CH +/–.
To record	Press ● (2 buttons simultaneously).
To play	Press ▶.
To slop	Press ■.
To fast forward	Press ▶▶.
To rewind the tape	Press ◀◀.
To pause	Press II.
To search the picture forward and backward	Press ▶▶ or ◀◀ during playback.

Operating a Video Disc Player	
To play	Press ▶.
To slop	Press ■.
To pause	Press II. *To resume normal playback, press again.* • This function is effective only for CAV (standard-play disc). With CLV (extended-play disc), the TV will go into the standby mode if II is pressed.
To search the picture forward and backward	Keep pressing ▶▶ or ◀◀ during playback. *To resume normal playback, release the button.*

Manufactures and Code Numbers (VCR/video disc player)

Manufacturer	Code number
SONY	01, 02, 03, 04
CANON	05
EMERSON	22.30. 33
FISHER	10. 11, 12.15
FUNAI	29
GENERAL ELECTRIC	05.06
GOLDSTAR	25
HITACHI	07.06
JVC	16
MAGNAVOX	05. 06.09
MITSUBISHI	16, 19. 26.27
MULTITECH	29
NEC	16.23.31
PANASONIC	05. 06
PHILCO	05.06
PHILIPS	05, 06, 09
QUASAR	05.06
RCA	07.06
SAMSUNG	24.32
SANYO	11, 15
SCOTT	21
SHARP	13.14
SHINTOM	34
SYLVANIA	05, 06, 09
SYMPHONIC	
TEKNIKA	26.29
TOSHIBA	20.21
TOTE VISION	25
ZENITH	17

The code numbers for Sony equipment are assigned as follows:

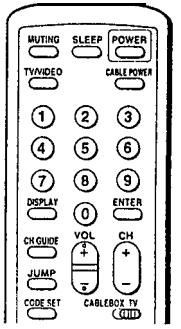
01 ..... Bela, ED Bela VCR
02 ..... 8 mm VCR
03 ..... VHS VCR
04 ..... Video disc player

Notes

- If more than one code number is listed for manufacturers other than Sony, try entering them one by one. until you come to the correct code for your equipment.
- If the video equipment does not have a certain function, the corresponding button on this Remote Commander will not operate.
- In some rare cases, you may not be able to operate your non-Sony video equipment with the supplied Remole Commander. This is because your equipment may use a code that is not provided with this Remote Commander. In this cane. please use the equipment's own remote control unit.

CAUTION

When you remove the batteries from the Remole Commander. all the settings will revert to the Sony Bela selling. Reset the codes by following the steps on p. 55.



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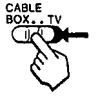
Operating a Cable Converter

Follow these instructions lo set the manufacturer's code which will enable you to operate a connected cable converter box with the pre-programmed Remote Commander.

EXAMPLE: Operate a connected Zenith cable converter box.

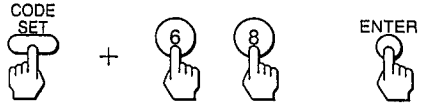
1 Set the CABLEBOX-TV selector to CABLEBOX.



Notes

- If more than one code number is listed. try entering them one by one until you come lo the correct code for your equipment.
- If you enter a new code number. the code number you previously entered at that setting is erased.
- In some rare cases, your equipment may use a code that is not provided with this Remote Commander and you may not be able lo operate your cable converter box with the supplied Remote Commander. In this case, use the equipment's own remote control unit.

2 While pressing CODE SET, press 6 and 8 (Zenith's code number -see chart below) and ENTER.



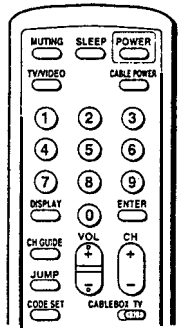
A long beep sounds, indicating that the code has been set.

Manufacturer end Code Numbers (cable box)

Manufacturer	Code number
JERROLD	60.61.62.63.64.65
PIONEER	69, 70
SCIENTIFIC ATLANTA	66, 67
TOCOM	71, 72
ZENITH	68

Note

If you press a wrong code or if the code has not been set, four short beeps sound. Repeat step 2 lo set the code.



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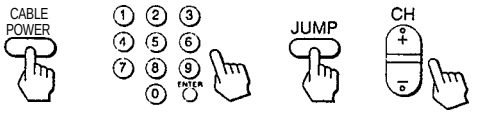
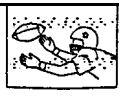
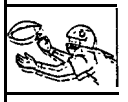
3 Use CABLE POWER and the TV control buttons (0 - 9. ENTER, JUMP and CH +/-) lo operate the cable converter box.



To operate the TV
Set the CABLEBOX-TV selector lo TV, the" "se the TV control buttons to control the N.

For more details on operating the cable box
Refer lo the operating instructions that come with the cable box.

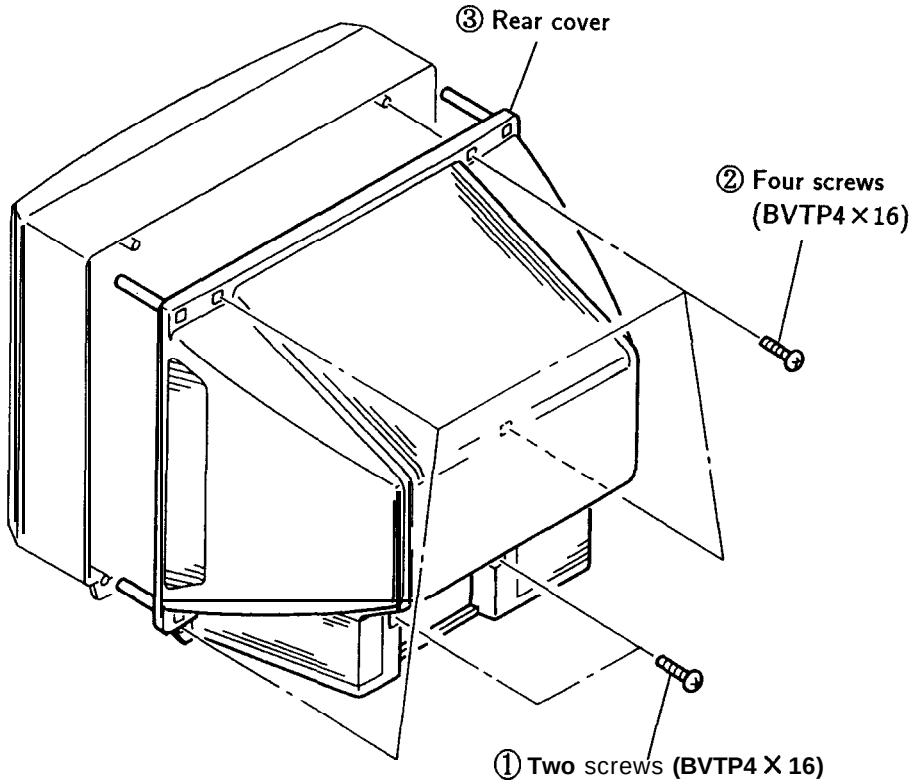
1-12. TROUBLESHOOTING

Symptom	: Possible causes and remedies
P 0or or no picture (screen not lit). good sound	• Adjust PICTURE. . Adjust BRIGHTNESS. • Check antenna/cable connections.
Good picture, no sound	. Press VOLUME + on the TV or VOL + on the Remote Commande . Press MUTING on the Remote Commander. . Check that the MTS setting is set correctly. . Check that the TV/VIDEO button Is set correctly. • Check that SPEAKER is set lo ON.
N O picture (screen not lit), no sound	• Is POWER switched on ? • Check the power cord connection. . Check that the N/VIDEO button is set correctly. . Check that S VIDEO is set lo ON.
NC color	• Is it a color program 7 . Adjust COLOR,
S"OW and noise only	• Is it an active or the correct channel 7 • Check the CABLE selling. . Check antenna/cable connections.
 Dolled lines or stripes	This is often caused by local interference. (e.g. cars, neon signs, hairdryers etc.) Adjust the antenna for minimum interference.
 Double images or ghosls	Reflections from nearby mountains or buildings often cause this problem. A highly directional outdoor antenna or a CAN cable may improve the picture.
Try another chs	nel. II could be station trouble.

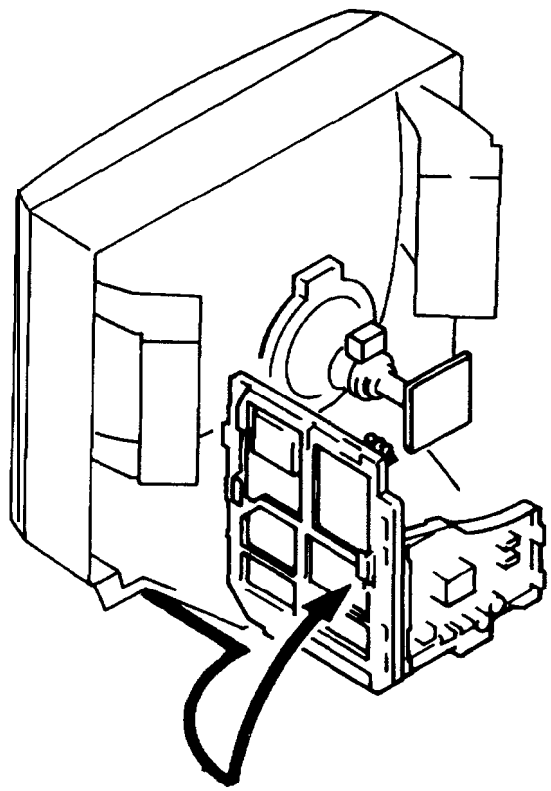
II the problem persists. contact your nearest service lacilily.

SECTION 2
DISASSEMBLY

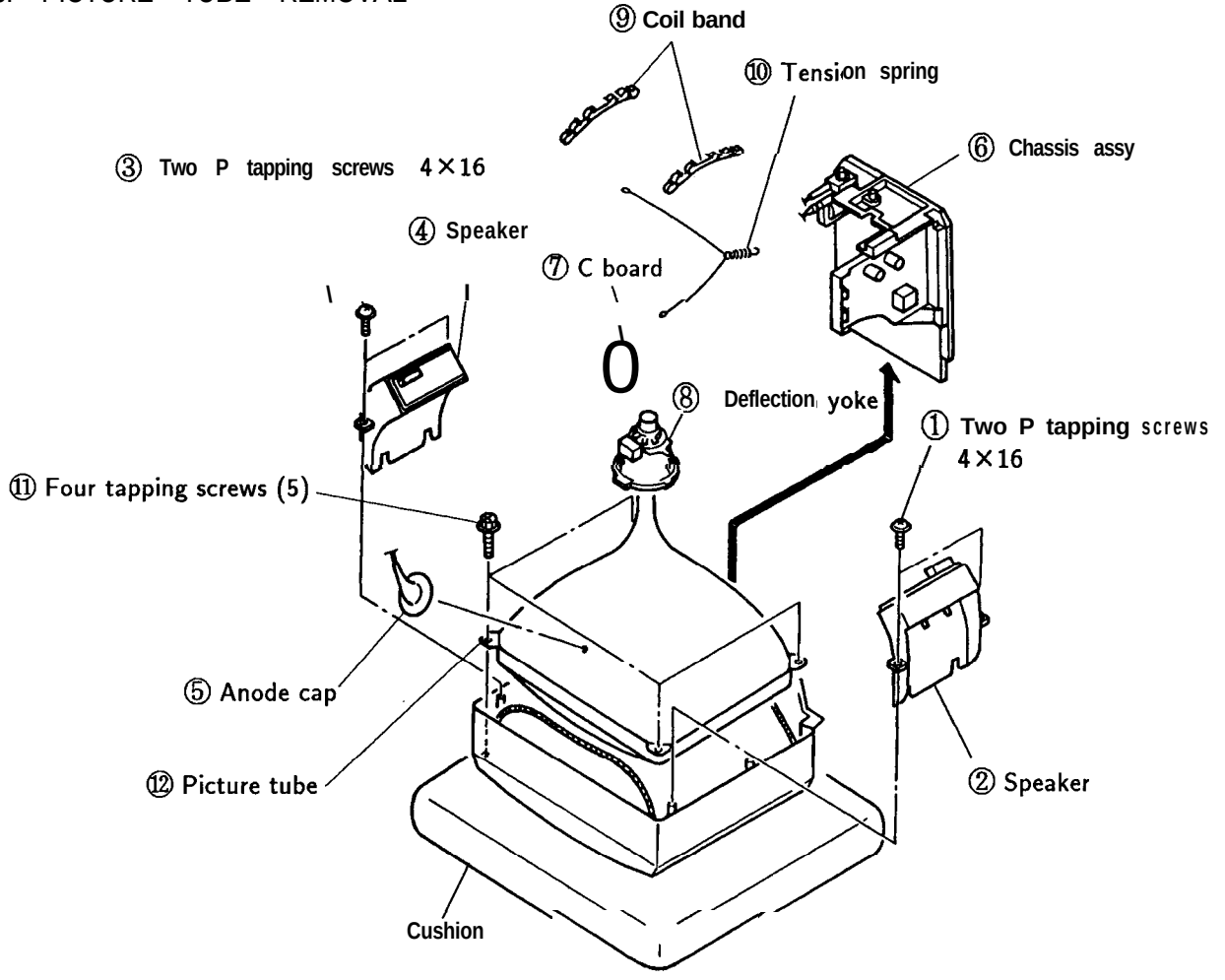
2-1. REAR COVER REMOVAL



2-2. SERVICE POSITION



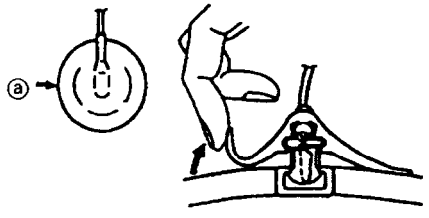
2-3. PICTURE TUBE REMOVAL



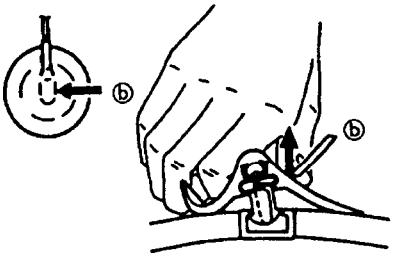
. REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

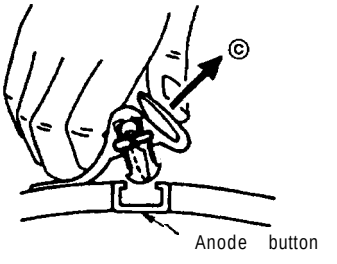
. REMOVING PROCEDURES



① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ.



② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ.



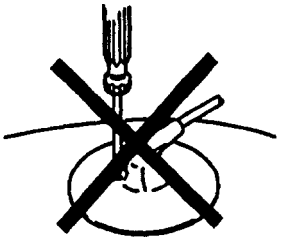
③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ.

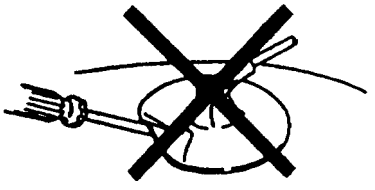
. HOW TO HANDLE AN ANODE-CAP

① Don't hurt the surface of anode-caps with sharp shaped material!

② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shatter-hook terminal is built in the rubber.

③ Don't turn the foot of rubber over hardly! The shatter-hook terminal will stick out or hurt the rubber.





SECTION 3
SET-UP ADJUSTMENTS

● The following adjustments should be made when a complete realignment is required or a new picture tube is installed.

● These adjustments should be performed with rated power supply voltage unless otherwise noted.

The controls and switch should be set as follows unless otherwise noted :

PICTURE control ..... normal

BRIGHTNESS control. .. normal

Perform the adjustments in order as follows:

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G 2) and White Balance

Note: Test Equipment Required.

1. Color bar Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter

Preparation:

● Feed in the white pattern signal.

● Before starting, degauss the entire screen.

3-I. BEAM LANDING

1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown in Fig.2
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are at the sides evenly. (Fig.3)
5. Move the deflection yoke forward, and adjust so that the entire screen becomes green. (Fig.1)
6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. When landing at the corner is not right, adjust by using the disk magnets. (Fig.4)

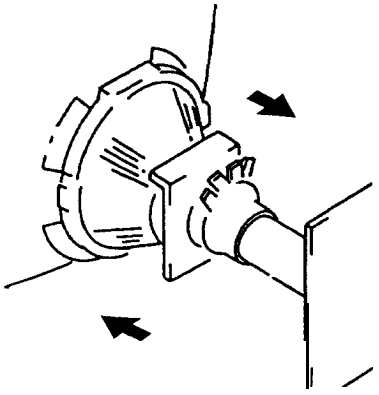


Fig.1

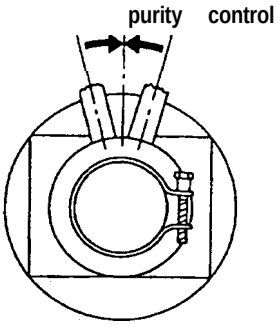


Fig.2

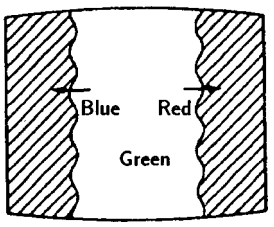


Fig.3

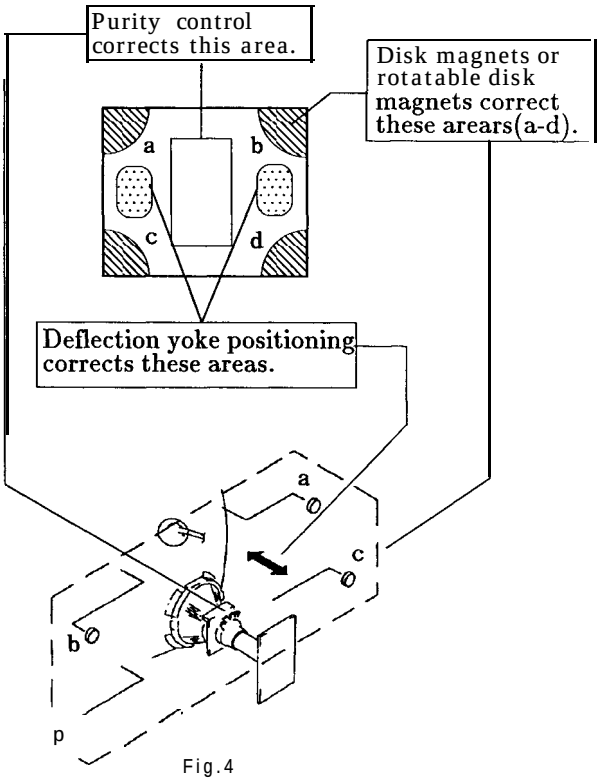


Fig.4

3-2. CONVERGENCE

Preparation:

- Before starting, perform FOCUS, H.SIZE, V.LIN and V.SIZE adjustments.
- Set BRIGHTNESS control to minimum.
- Feed in dot pattern.

(1) Horizontal and Vertical Static Convergence

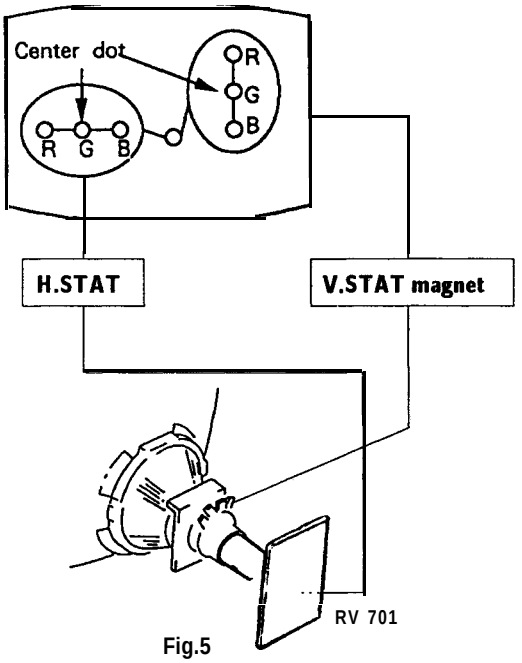
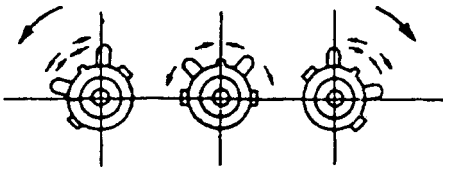


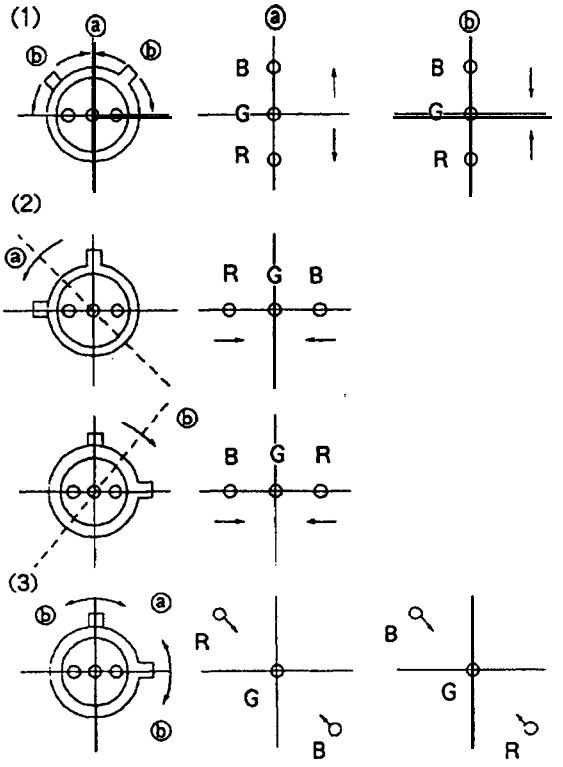
Fig.5

1. Adjust H.STAT VR to converge red, green and blue dots the in center of the screen.(Horizontal movement)
2. Adjust V. STAT magnet to converge red, green and blue dots in the center of the screen. (Vertical movement)
3. If the red, green and blue dots do not converge on the center of screen with H.STAT VR, perform horizontal convergence adjustment using H.STAT VR and V.STAT magnet as shown below. (In this case, H.STAT VR and V.STAT magnet effect each other.)

- Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.



4. When the V.STAT magnet is moved in the direction of arrow ⓐ and ⓑ, red, green and blue dots move as shown below.



If the blue dot does not converge with red and green dots, perform following steps.

Move BMC magnet (a) to correct insufficient H.static convergence.

Rotate BMC magnet (b) t0 correct insufficient V.static convergence.

In either case, repeat Beam Landing Adjustment.

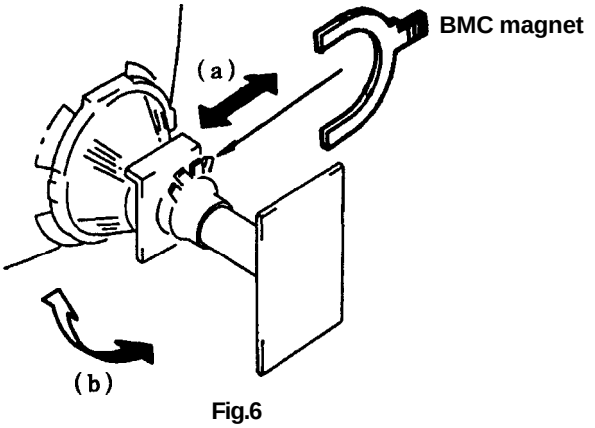


Fig.6

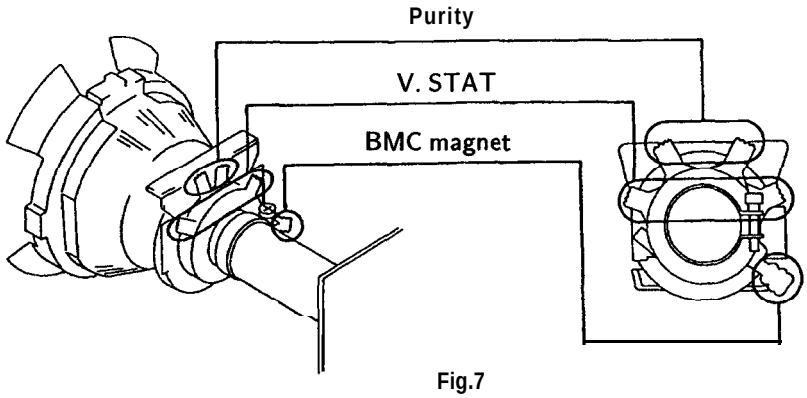


Fig.7

(2)Dynamic Convergence Adjustment

Preparation:

- Before starting perform Horizontal and Vertical static convergence Adjustment.

1. Slightly loosen deflection yoke screw.
2. Remove deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

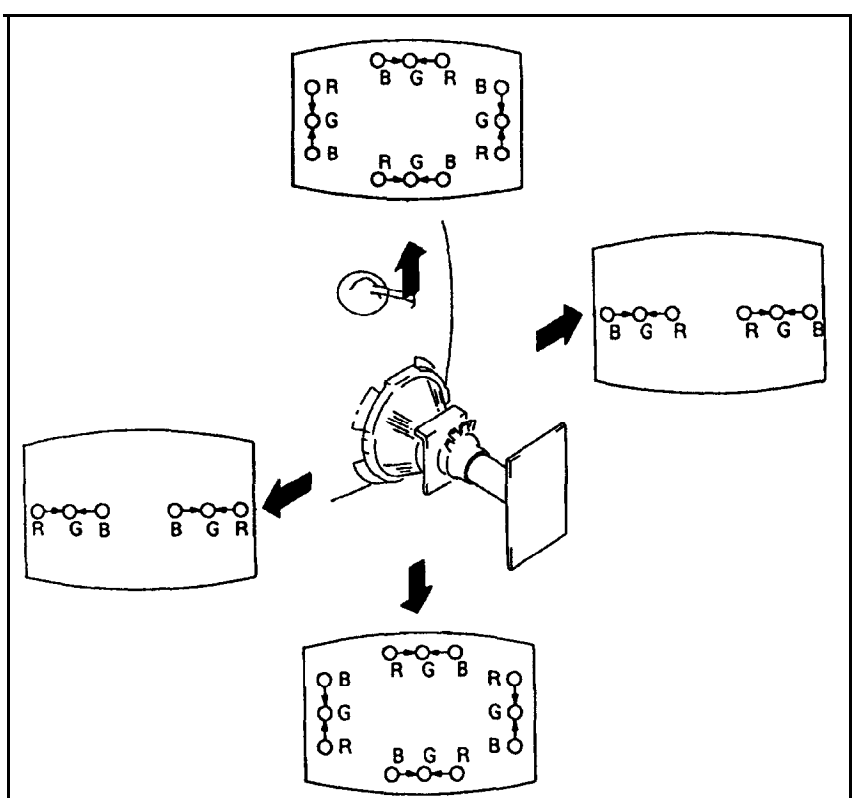


Fig.8

(3) Screen-corner Convergence

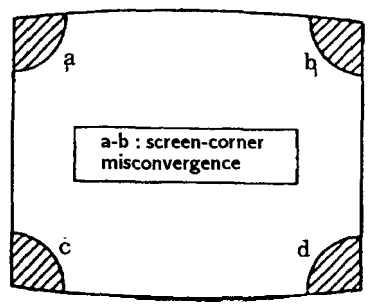
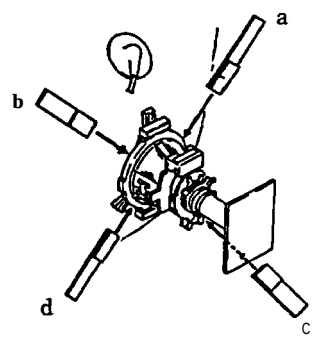


Fig.9

Affix a Permalloy ass'y corresponding to the misconverged areas



Permalloy assembly

3-3. FOCUS

Adjust FOCUS control for best picture.

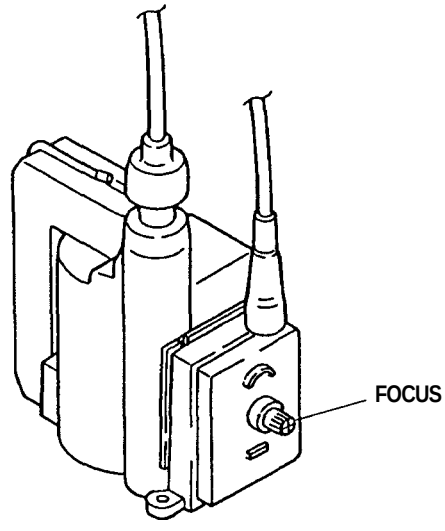


Fig.10

3-4. SCREEN(G 2)

1. Input a dots pattarn.
2. Set the PIC, BRT controls at minimum and COLOR control at normal.
3. Adjust BKG VRs so that voltages on the red, green and blue cathodes are 170 V dc with an oscilloscope as shown in Fig.11.
4. Observe the screen and adjust SCREEN (G 2)RV 702 to obtain the faintly visible background of dot signal.

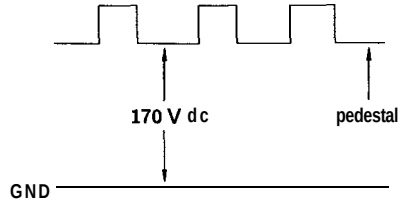


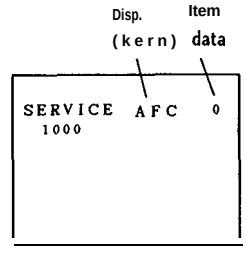
Fig.11

3-5. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

SERVICE MODE PROCEDURE

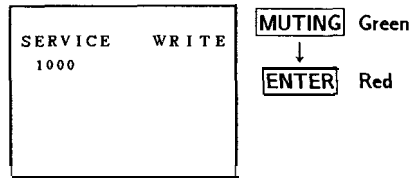
1. Standby mode.(Power off)
2. DISPLAY → 5 → VOL (+) → POWER on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN



3. The CRT displays the item Being adjusted.
4. Press 1 or 4 on the Remote Commander to select the item.
5. Press 3 or 6 on the Remote Commander to change the data.
6. Press MUTING then ENTER to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



7. Turn set off and on to exit.

3-6. WHITE BALANCE ADJUSTMENTS

1. Input an entire white signal.
2. Set to service adjustment mode.
3. Set the PICTURE and BRIGHT to minimum.
4. Adjust with SBRT if necessary.
5. Select G CUT and B CUT with 1 and 4.
6. Adjust with 3 and 6 for the best white balance.
7. Set the PICTURE and BRIGHT to maximum.
8. Select GAMP and BAMP with 1 and 4.
9. Adjust with 3 and 6 for the best white balance.
10. Write into the memory by pressing MUTING then ENTER.

SECTION 4
SAFETY RELATED ADJUSTMENTS

A BOARD

☒ R537 CONFIRMATION METHOD (HV HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

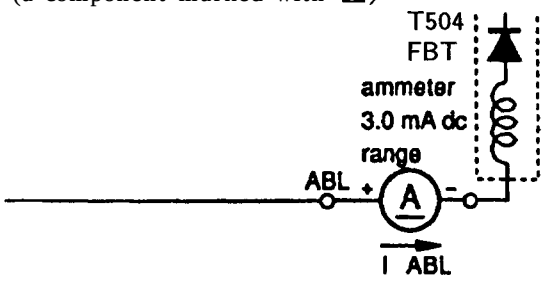
The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
IC602, D511, C523, C524, R534, R535, R537, R549, R637, PM501, T504, DY

①

1. Preparation before confirmation
 1) Turn the POWER switch ON, and receive entirely white signal and set the PICTURE and BRIGHT controls to maximum.
 2) Confirm that the voltage of the check terminal of TP85 is more than 100VDC when the set is operating normaly with 120.0 ± 2.0VAC supply.

2. Hold-down operation confirmation (HV)
 1) Connect the currentmeter between the 7th pin of FBT (T504)and the land of it with connect polarity.
 2) Receive White Signal and adjust the ABL current to follows with the PICTURE and the BRIGHT controls.
  1 4 5 0 ± 100μA
 3) Connect the Digital Voltmeter to pin8 of PM501 then read the voltage as A.
 4) Connect the Digital Voltmeter and DC power Supply via 1SS 119 to TP-85.
 5) Increase the DC power voltage gradually until the Picture just blanks out.
 6) Read the digital voltmeter indication.
 7) Turn DC power Source off immediatery.
  STANDARD
  Less or equal to A + 16.5 VDC
 8) Receive Dot Signal and adjust the ABL current to follows, with the PIX and the BRT controls.
  150 ± 100 μA
 9) Repeat steps from (3) to (7).
  STANDARD
  Less or equal to A + 16.5 VDC

3. Hold-down readjustment
 When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R537 (a component marked with ☒).



A BOARD

❑ R511 CONFIRMATION METHOD (B+ HOLD-DOWN CONFIRMATION) AND READJUSTMENTS

The following adjustments should always be performed when replacing the following components (marked with ◪ on the schematic diagram).
IC602, C524, R511, R534, R549, R637, PM501

②

1. Hold-Down Operation Voltage (B+)
 1) Connect the currentmeter between the 7th pin of FBT (T504)and the land of it with connect polarity.
 2) Receive White Signal and adjust the ABL current to follows with the PICTURE and the BRIGHT controls.
  1 4 5 0 ± 100μA
 3) Connect the Digital Voltmeter and DC power Supply via 1SS 119 to pin8 of PM501.
 4) Increase the DC power voltage gradually until the Picture just blanks out.
 5) Read the digital voltmeter indication.
 6) Turn DC power Source off immediatery.
  STANDARD
  Less or equal to 130.0 VDC
 7) Receive Dot Signal and adjust the ABL current to follows, with the PICTURE and the BRIGHT controls.
  150 ± 100 μA
 8) Repeat steps from (4) to (6).
  STANDARD
  Less or equal to 132.5 VDC

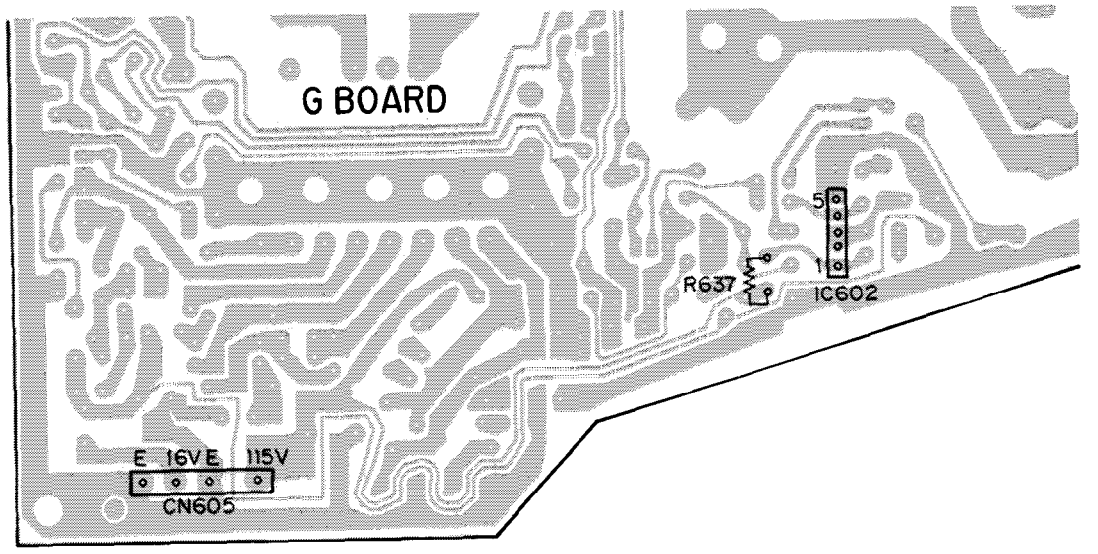
2. Hold-down readjustment
 When step 2 is not satisfied, readjustment should be performed by altering the resistance value of R511 (a component marked with 8).

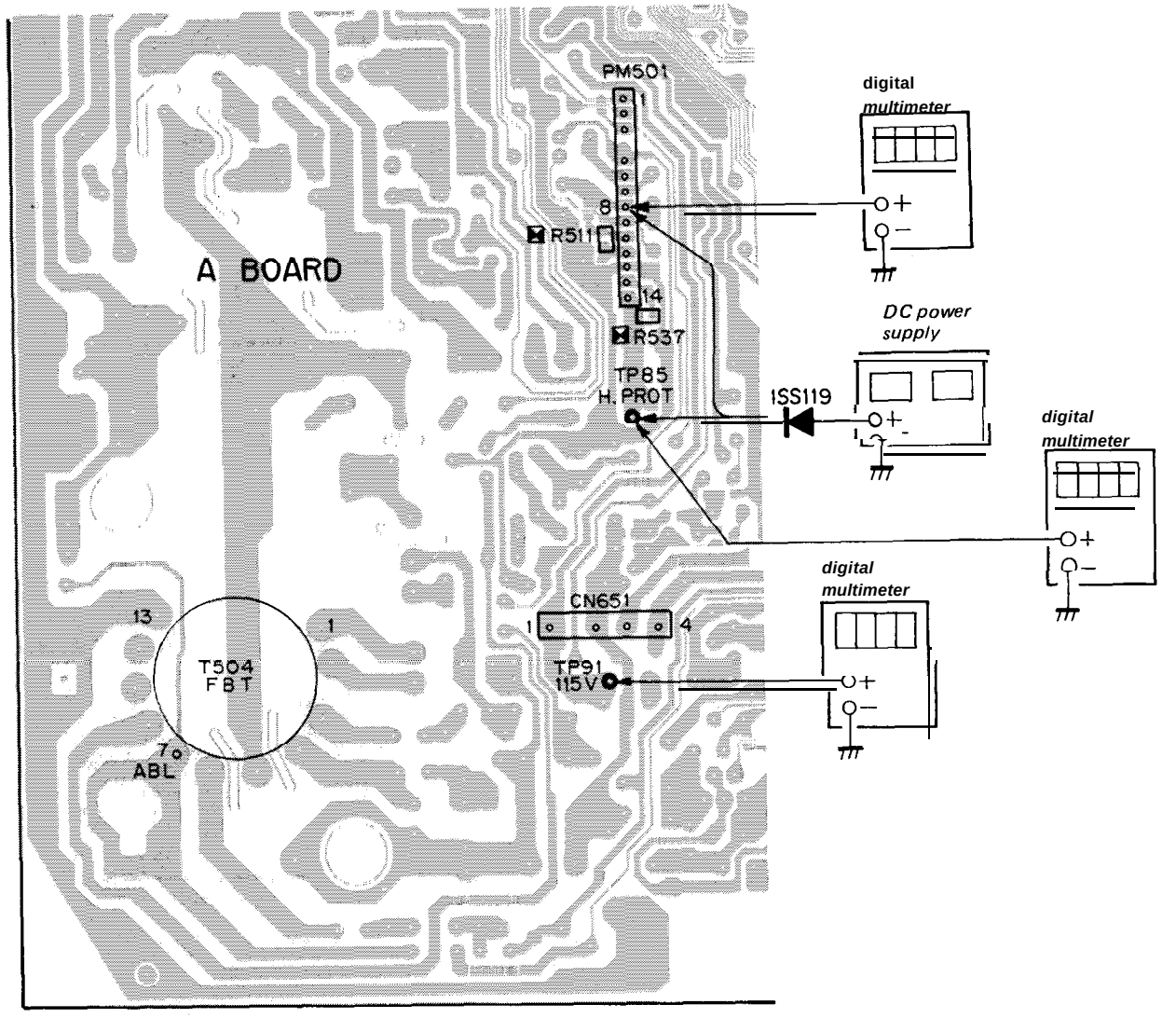
G BOARD

B+ VOLTAGE CONFIRMATION]

The following adjustments should always be performed when replacing IC602 or R637.

 1) Supply 130±2%V AC to with variable autotransformer.
 2) Input an entirely monoscope signal.
 3) Set the PICTURE control and the BRIGHT controls in to initial reset.
 4) Confirm the voltage of A BOARD ① pin CN651 connecter is less than 116.5V DC.
 5) If step 4) is not satisfied, replace IC602 and R637 repeat above steps.


G BOARD
5
1
R637
IC602
E 16V E 115V
CN605


A BOARD
PM501
1
8
14
R511
R537
TP85
H. PROT
ISS119
CN651
1
4
TP91
115V
13
1
T504
FBT
7
ABL
digital
multimeter
DC power
supply
digital
multimeter
digital
multimeter

SECTION 5
CIRCUIT ADJUSTMENTS

5-I. ELECTRICAL ADJUSTMENT BY REMOTE COMMANDER

Use of Remote Commander (RM-Y117) can be performed circuit adjustments about this model.

NOTE : Test Equipment Required.

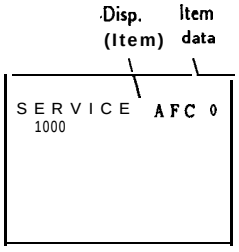
1. Pattern Generator
2. Frequency counter
3. Digital multimeter
4. Audio OSC

1. METHOD OF SETTING THE SERVICE ADJUSTMENT MODE

SERVICE MODE PROCEDURE

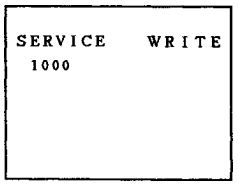
1. Standby mode.(Power off)
2. DISPLAY → 5 → VOL (+) → POWER on the Remote Commander. (Press each button within a second.)

SERVICE ADJUSTMENT MODE IN



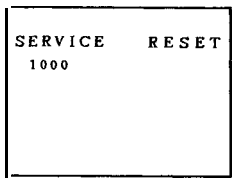
3. The CRT displays the item Being adjusted.
4. Press 1 or 4 on the Remote Commander to select the item.
5. Press 3 or 6 on the Remote Commander to change the data.
6. Press MUTING then ENTER to write into memory.

SERVICE ADJUSTMENT MODE MEMORY



MUTING Green
↓
ENTER Red

7. Press 8 then ENTER on the Remote Commander t o e .



Carry out step 7) when adjusting IDs 0 to 4 and when replacing and adjusting IC102.

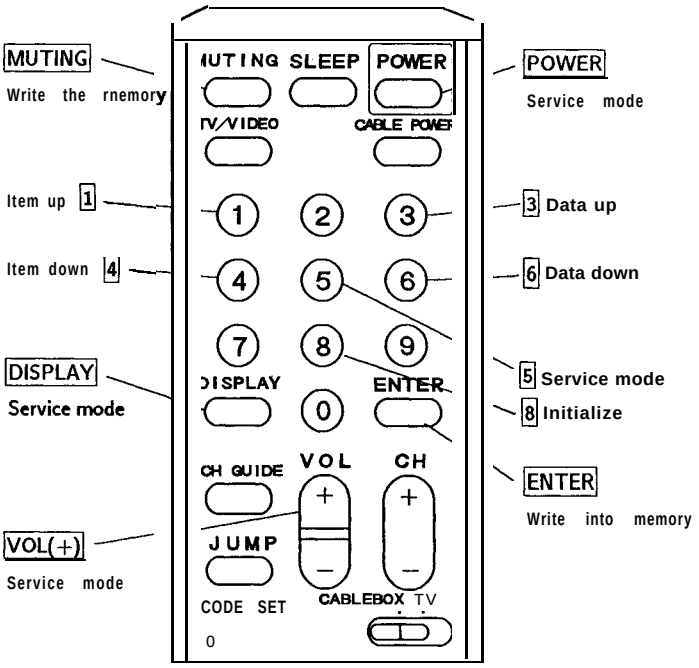
Factory original setting

8. Turn set off and on to exit.

2. MEMORY WRITE CONFIRMATION METHOD

1. After adjustment, pull out the plug from AC outlet, and next place, plug in AC outlet again.
2. Turn the power switch ON and set to Service Mode.
3. Call the adjusted items again, confirm they were adjusted.

3. ADJUST BUTTONS AND INDICATOR



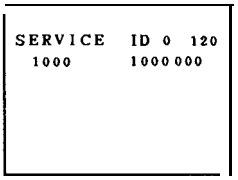
RM-Y117

4. AN ITEM OF ADJUSTMENTS

No.	Disp.	4ve. data	Data range	Item
1	AFC	* 0	o - 3	AFC Loop Gain
2	HFRE	78	O-127	H. Frequency
3	VFRE	15	o-31	V. Frequency
4	VPOS	20	o-31	V. Center
5	VSIZ	31	O-63	V. Size
6	VLIN	8	O-15	V. Linearity
7	vsco	6	O-15	V. Correction
8	HPOS	6	O-15	H. Center
9	HSIZ	16	o-31	H. Size
10	PAMP	23	o-31	Pin Amp
11	CPIN	4	o - 7	Corner Pin
12	PPHA	7	O-15	Pin Phase
13	VCOM	* 2	o - 7	V. Compensation
14	GAMP	21	o-31	Green Amp
15	BAMP	16	o-31	Blue Amp
16	GCUT	6	O-15	Green Cut Off
17	BCUT	7	O-15	Blue Cut Off
18	CROM	26	O-63	Chroma Trap
19	SPIX	32	O-63	Sub Contrast
20	SHUE	25	O-63	Sub Hue
21	SCOL	30	O-63	Sub Color
22	SBRT	34	O-63	Sub Bright
23	RGBP	* 18	O-63	RGB Picture
24	SHAP	* 7	O-15	Sharpness
25	VSMO	* 0	0, 1	V Pull in Range
26	REF	* 2	o - 3	Refference line
27	ROFF	1	0, 1	Red Out
28	GOFF	1	0, 1	Green Out
29	BOFF	1	0, 1	Blue Out
30	ABLM	* 0	0, 1	ABL Mode
31	NOTC	* 0	0, 1	Notch On/Off
32	DRGB	* 0	0, 1	OSD intensity
33	VANG	not use	O-63	V. Angle
34	DISP	40	O-63	Display Position
35	SVOL	* 0	O-7	Sub Volume
36	SBAL	7	O-7	Sub Balance
37	BASS	not use	O-15	Sub Bass
38	TRE	not use	O-15	Sub Treble
39	UYBO	not use	O-63	Upper Y. Bow
40	LYBO	not use	O-63	Lower Y. Bow
41	HAMP	not use	O-63	H. Amp
42	HTIL	not use	O-63	H. Tilt
43	UCBO	not use	O-63	Upper C. Bow
44	UTIL	not use	O-63	Upper Tilt
45	LCBO	not use	O-63	Lower C. Bow
46	LTIL	not use	O-63	Lower Tilt
47	DCSH	not use	O-63	DC. Shift
48	PHPO	not use	O-127	PinP H Position
49	PHUE	not use	O-63	PinP Hue
50	ID-O	* 120	O-127	Model ID
51	ID-1	* 127	O-127	Model ID
52	ID-2	* 72	O-127	Model ID
53	ID-3	* 0	O-127	Model ID
54	ID-4	* 16	O-127	Model ID

* : Set-up value

Note : No.from 1 to 54 is to show adjustment order.



Please adjust the function values as shown below when IC 102 on A board was replaced.

KV-20V 50 (US/CND)

No.	Disp.	Disp.	Data
50	ID-O	1 1 1 1 0 0 0	120
51	ID-I	1 1 1 1 1 1 1	127
52	ID-2	1 0 0 1 0 0 0	72
53	ID-3	0 0 0 0 0 0 0	0
54	ID-4	0 0 1 0 0 0 0	16

5-2. A BOARD ADJUSTMENTS

RF AGC ADJUSTMENT(IF BLOCK VR)

1. Input a color-bar signal.
2. Adjust AGC VR of TU 101 so that snow noise and cross-modulation disappear from the picture.
3. Confirm them at every channel.

H.FREQUENCY ADJUSTMENT (HFRE)

1. Input a color-bar signal.
2. Set to Service adjustment Mode.
3. Connect a frequency counter to base of Q550 (TP-86 H.DRIVE).
4. Call the item of AFC, set to 3 level (free run).
5. Select HFRE with 1 and 4.
6. Adjust with 3 and 6 for the 15734± 60Hz.
7. Call the item of AFC again, adjust the level" 0 ".
8. Write into the memory by pressing MUTING then ENTER.

V.FREQUENCY ADJUSTMENT (VFRE)

1. Select video 1 with no connecting the signal.
2. Set to Service adjustment Mode.
3. Connect the frequency counter across connector VDY (+) (CN501) connector and ground.
4. Select VFRE with 1 and 4.
5. Adjust with 3 and 6 for the 55 ±0.5Hz.
6. Write the memory by pressing MUTING then ENTER

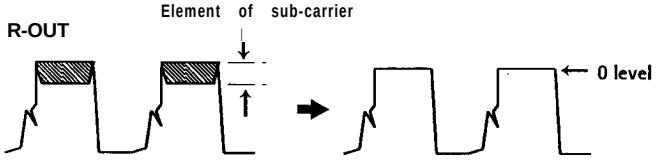
CROMA TRAP ADJUSTMENT (CROM)

1. Connect * " y+c cable"to Y input of S Video,

* Must prepare " y+c cable"by connecting C to Y in the middle.

Note : Set CROM average data at 26 if S-video input is impossible.

2. Set to Service adjustment Mode.
3. Connect an oscilloscope CN703 Pin① (R OUT) of C board ground.
4. Select CROM with 1 and 4.
5. Adjust with 3 and 6 for the 0 level.



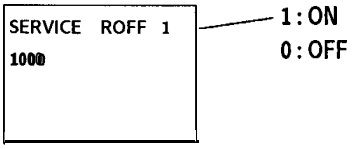
6. Write the memory by pressing MUTING then ENTER .

SUB CONTRAST ADJUSTMENT (SPIX)

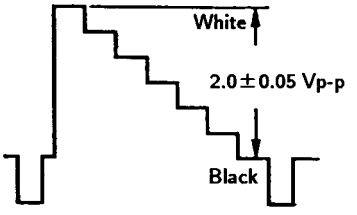
1. Input a color-bar signal.
2. Set to Service adjustment Mode.
3. Set the conditions as follows.

PICTURE	·····	MAX
COLOR	·····	MIN
BRIGHT	·····	MIN

R OFF	·····	ON (1)
G OFF	·····	OFF (0)
B OFF	·····	OFF (0)



4. Connect an oscilloscope to CN703 Pin① (R OUT) of C board and ground.
5. Select SPIX with 1 and 4.
6. Adjust with 3 and 6 for the 2.0±0.05Vp-p.

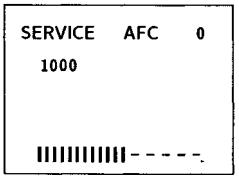


7. Write the memory by pressing MUTING then ENTER .
8. Return the following back to normal after adjustment.

PICTURE	·····	MAX
BRIGHT	·····	CENTER
COLOR	·····	CENTER
R OFF	·····	ON
G OFF	·····	ON
B OFF	·····	ON

DISPLAY POSITION ADJUSTMENT (DISP)

1. Input a color-bar signal.
2. Set to service adjustment Mode.
3. Select DISP with 1 and 4.
4. Adjust with 3 and 6 for the bar center.
5. Write the memory by pressing MUTING then ENTER.



SUB BRIGHT ADJUSTMENT (SBRT)

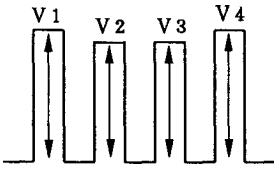
1. Input a cross-hatch signal.
2. Set to service adjustment mode.
3. Set the PICTURE and BRIGHT to minimum.
4. Select SBRT with 1 and 4.
5. Adjust with 3 and 6 for obtain a faintly visible cross-hatch.
6. Write into the memory by pressing MUTING then ENTER.

SUB BALANCE ADJUSTMENT (SBAL)

1. Input a stereo signal.
2. Set to service adjustment mode.
3. Select SBAL with 1 and 4.
4. Adjust with 3 and 6 for the best sound balance.
5. Write into the memory by pressing MUTING then ENTER.

(SUB HUE, SUB COLOR ADJUSTMENT (SHUE, SCOL)

1. Input a color-bar signal.
2. Set to service adjustment Mode.
3. Connect an oscilloscope to CN703 Pin@ (B OUT) of C board.
4. Select SHUE and SCOL with 1 and 4.
5. Adjust with 3 and 6 for the V1=V4 (SCOR) and V2 =V3 (SHUE).

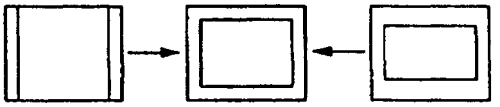


6. Write into the memory by pressing MUTING then ENTER.

V.SIZE ADJUSTMENT (VSIZ)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select VSIZ with 1 and 4.
4. Adjust with 3 and 6 for the best vertical size.
5. Write into the memory by pressing MUTING then ENTER.

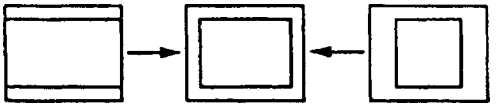
V. SIZE (VSIZ)



H.SIZE ADJUSTMENT (HSIZ)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select HSIZ with 1 and 4.
4. Adjust with 3 and 6 for best horizontal size.
5. Write into the memory by pressing MUTING then ENTER.

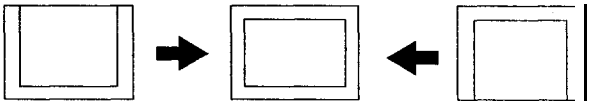
H. SIZE (HSIZ)



V.CENTER ADJUSTMENT (VPOS)

1. Input a cross-hatch signal.
2. Set to service adjustment Mode.
3. Select VPOS with 1 and 4.
4. Adjust with 3 and 6 for the best vertical senter.
5. Write into the memory by pressing (MUTING] then ENTER

V. CENTER (VPOS)

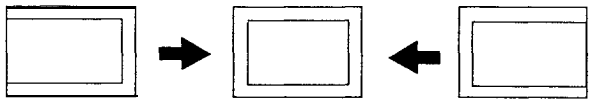


H.CENTER ADJUSTMENT (H POS)

Note: Perform this adjustment after H.FREQUENCY ADJUSTMENT (HFRE) .

1. Input a cross-hatch signal.
2. Set the Service adjustment mode.
3. Select HPOS with 1 and 4 .
4. Adjust with 3 and 6 to the best horizontal center.
5. Write into the memory by pressing MUTING then ENTER .

H. CENTER (HPOS)

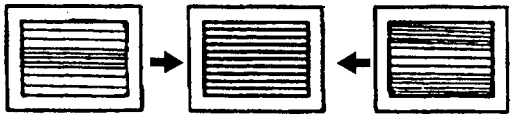


V LINEARITY(VLIN), VS CORRECTION(VSCO), PIN AMP(PAMP), CORNER PIN(CPIN), AND PIN PHASE(PPHA) ADJUSTMENTS

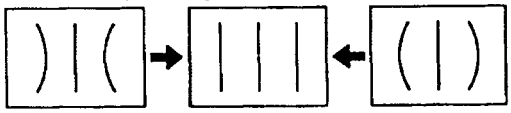
1. Input a cross-hatch signal.
2. Set to Service adjustment Mode.
3. Select VLIN, VSCO, PAMP, CPIN, and PPHA with 1 and 4.
4. Adjust with 3 and 6 for the best picture.
5. Write the memory byPressing MUTING then ENTER.

V LINEARITY (VLIN)

VS CORRECTION (VSCO)

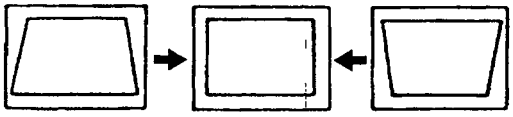


PIN AMP (PAMP)



CORNER PIN (CPIN)

PIN PHASE (PPHA)

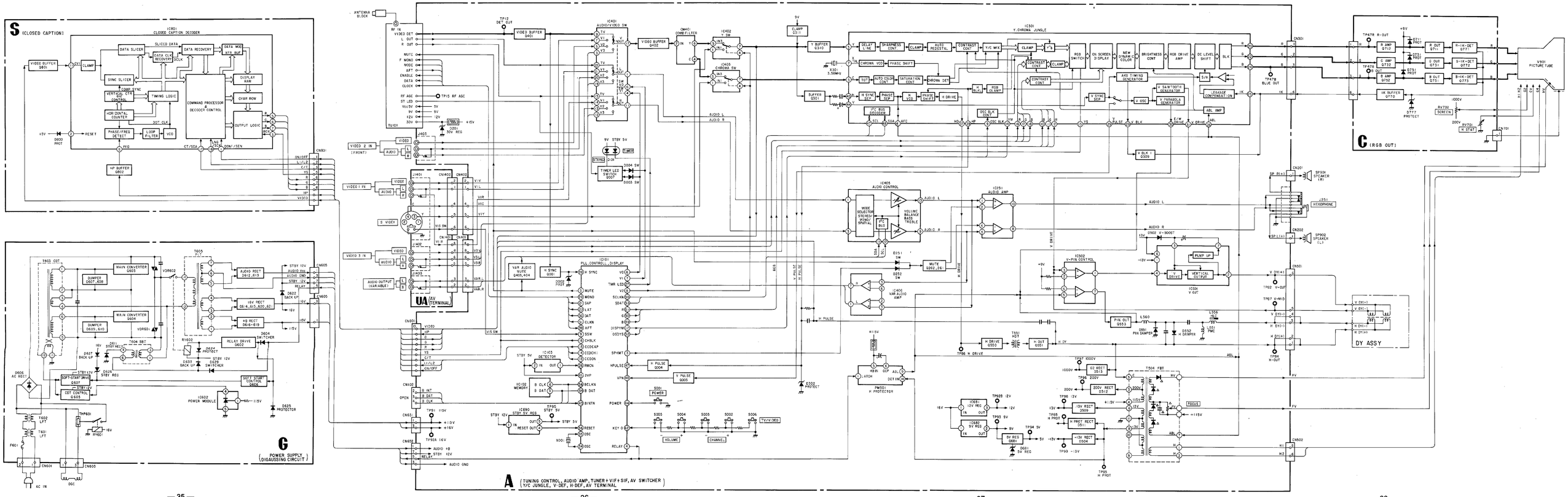


MEMO

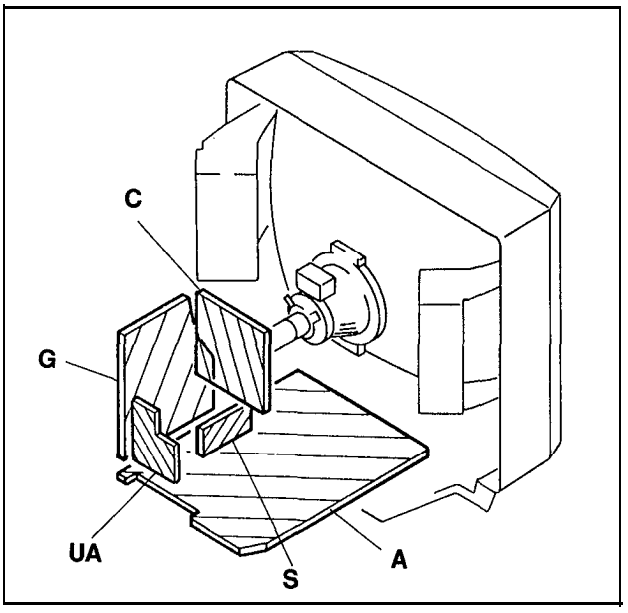
KV-20V50 RM-Y117 KV-20V50 RM-Y117

SECTION 6 DIAGRAMS

6-1. BLOCK DIAGRAM


S (CLOSED CAPTION)
G (POWER SUPPLY, DIGAUSSING CIRCUIT)
A (TUNING CONTROL, AUDIO AMP, TUNER+VIF+SIF, AV SWITCHER / Y/C JUNGLE, V-DEF, H-DEF, AV TERMINAL)
C (RGB OUT)
UA (AV TERMINAL)
DY ASSY
V901 PICTURE TUBE

6-2. CIRCUIT BOARDS LOCATION



6-3. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

Note:

- All capacitors are in μF unless otherwise noted.
  pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All electrolytics are in 50V unless otherwise specified.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power 1/4W

- Chips resistors are 1/1 OW.
- All resistors are in ohms.
  kΩ=1000Ω, MΩ=1 000KΩ
- : nonflammable resistor.
- : fusible resistor.
- △: internal component.
- : panel designation, and adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by ◪ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪ , make the necessary adjustments indicated. If results do not meet the specified value, change the component identified by ❑ and repeat the adjustment until the specified value is achieved.
  (Refer to R511 and R537 on page 27, 28)
- When replacing the part in below table be sure to parform the related adjustment.

Part replaced (◪)		Adjustment (❑)
C524, R511, R534, R549, PM501	A BOARD	B+ HOLD-DOWN (R511)
IC602, R637	G BOARD	
D511, C523, C524, R534, R535, R537,. R549, PM501, T504	D BOARD	HOLD-DOWN (R537)
IC602, R637	G BOARD	
DY		

- All voltages are in V.
- Voltage are dc with respect to ground unless otherwise noted
- Readings are taken with a 10 MΩ digital multimeter.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerance.
- Circled numbers are waveform references
- : B+ line.
- : B-line.
- : signal path.

Reference information

RESISTOR :	RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR :	TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

Note:The symbol display is on the component side.

The components identified by shading and mark A are critical for safety. Replace only with part number specified.

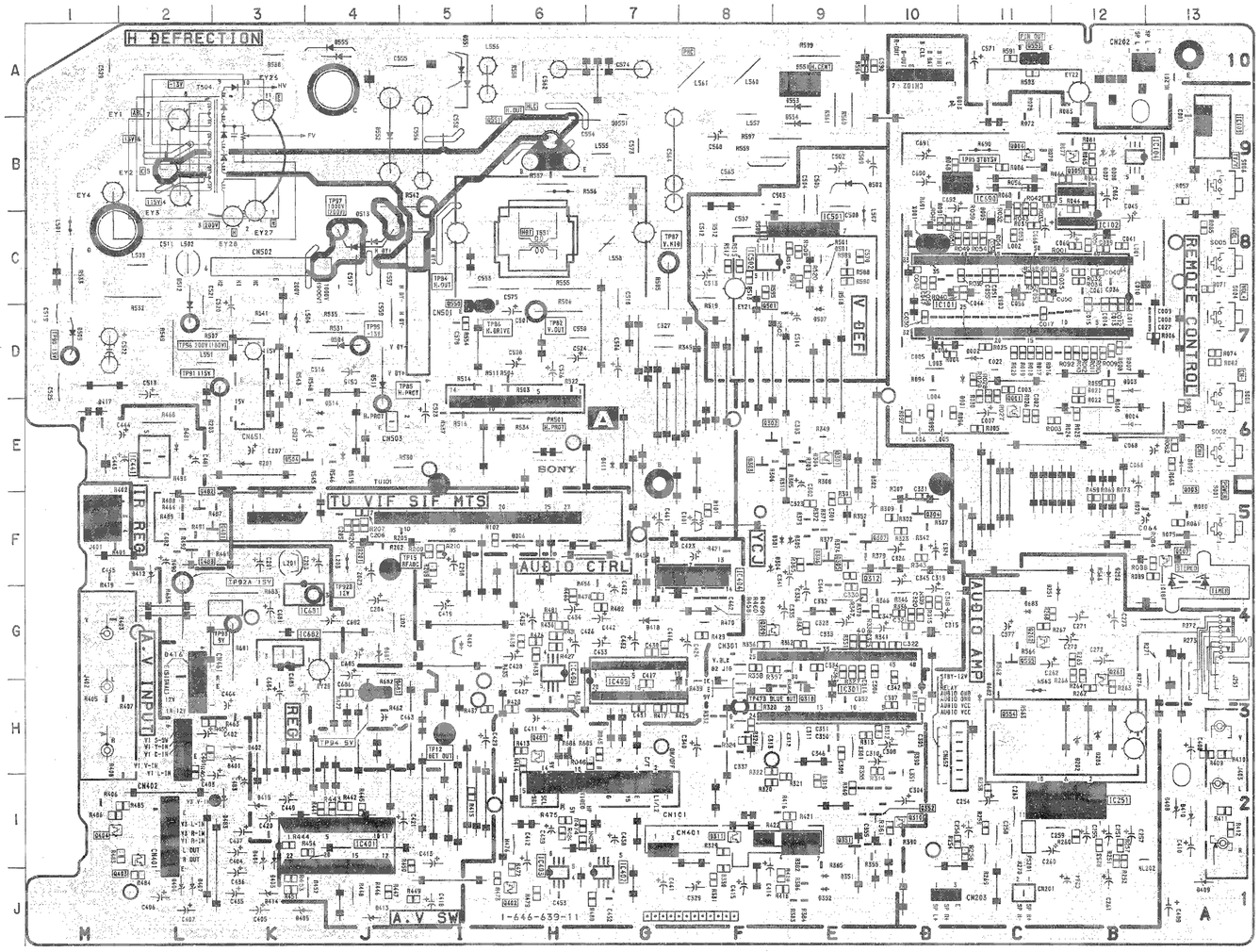
The symbol indicate fast operating fuse. Replace only with fuse of same rating as marked.

Note:Les composants identifies par un tramé et une marque A sont critiques pour la sécurité. Ne les remplacer que par une piece portant le numéro spécifié.

Le symbole indique une fusible a action rapide. Doit etre remplacee par une fusible de meme yaleur, comme maque.

A Y/C JUNGLE, TUNER + VIF + MTS VERTICAL DEFLECTION, HORIZONTAL DEFLECTION, AUDIO AMP AV SWITCHER, AV TERMINAL

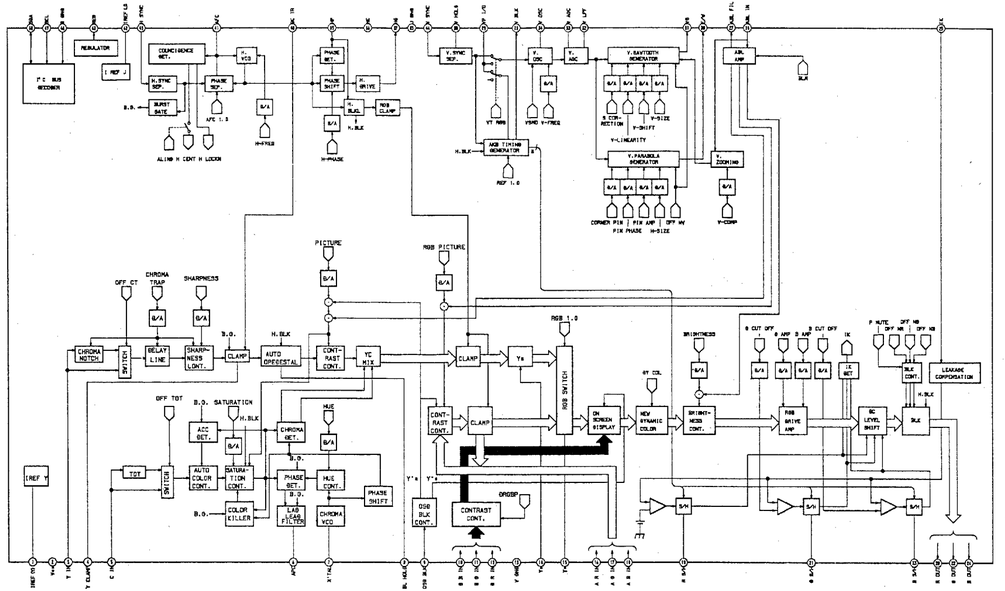
— A Board —



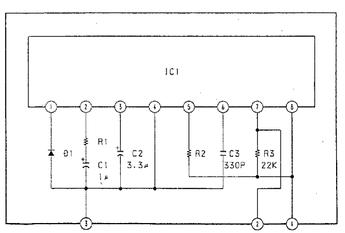
— A Board —

IC			
IC101	D-11	D006	F-6
IC102	B-12	D101	F-13
IC103	B-13	D201	E-9
IC251	I-12	D251	G-12
IC301	H-9	D252	F-12
IC401	I-4	D302	F-10
IC402	J-7	D401	H-1
IC403	J-6	D402	H-1
IC404	F-8	D403	I-3
IC405	H-7	D404	I-3
IC406	G-6	D405	J-3
IC501	C-9	D406	J-2
IC502	C-8	D407	J-2
IC681	G-3	D408	I-13
IC682	G-3	D409	J-13
IC690	B-11	D410	I-13
PM-501	E-6	D412	F-2
		D413	G-2
TRANSISTOR		D414	J-3
		D415	I-3
Q001	E-11	D483	I-2
Q004	B-11	D502	B-9
Q005	B-12	D504	D-4
Q007	F-13	D509	D-11
Q261	G-12	D511	D-4
Q262	G-11	D512	D-2
Q301	E-9	D513	C-4
Q309	G-8	D551	A-4
Q310	I-10	D552	B-4
Q311	I-8	D681	G-4
Q401	H-6	**TEST POINT**	
Q402	J-6		
Q403	I-2	TP15	F-5
Q404	I-1	TP82	D-6
Q550	C-5	TP84	C-5
Q551	B-6	TP85	E-5
Q553	A-11	TP86	D-5
Q681	H-6	TP87	C-7
		TP89	D-1
DIODE		TP91	D-2
		TP92A	G-2
D002	D-11	TP92B	G-4
D003	D-12	TP93	G-3
D004	E-12	TP94	H-4
D005	C-11	TP96	D-2
		TP97	C-4
		TP99	D-4

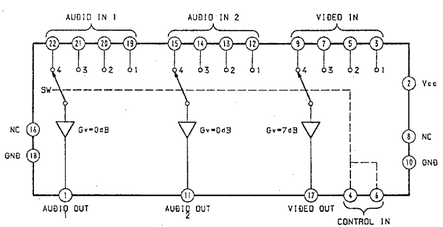
A BOARD IC301 CXA1465AS



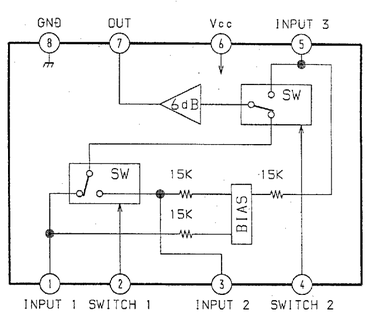
A BOARD IC103 SBX1618-51



A BOARD IC401 M52470AP

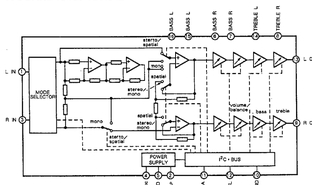


A BOARD IC402, IC403 MM1114XEF

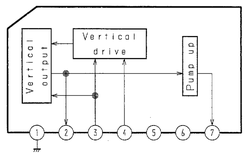


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

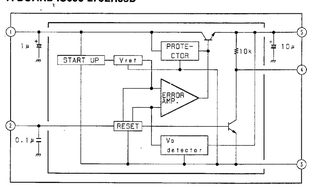
A BOARD IC405 TDA8424

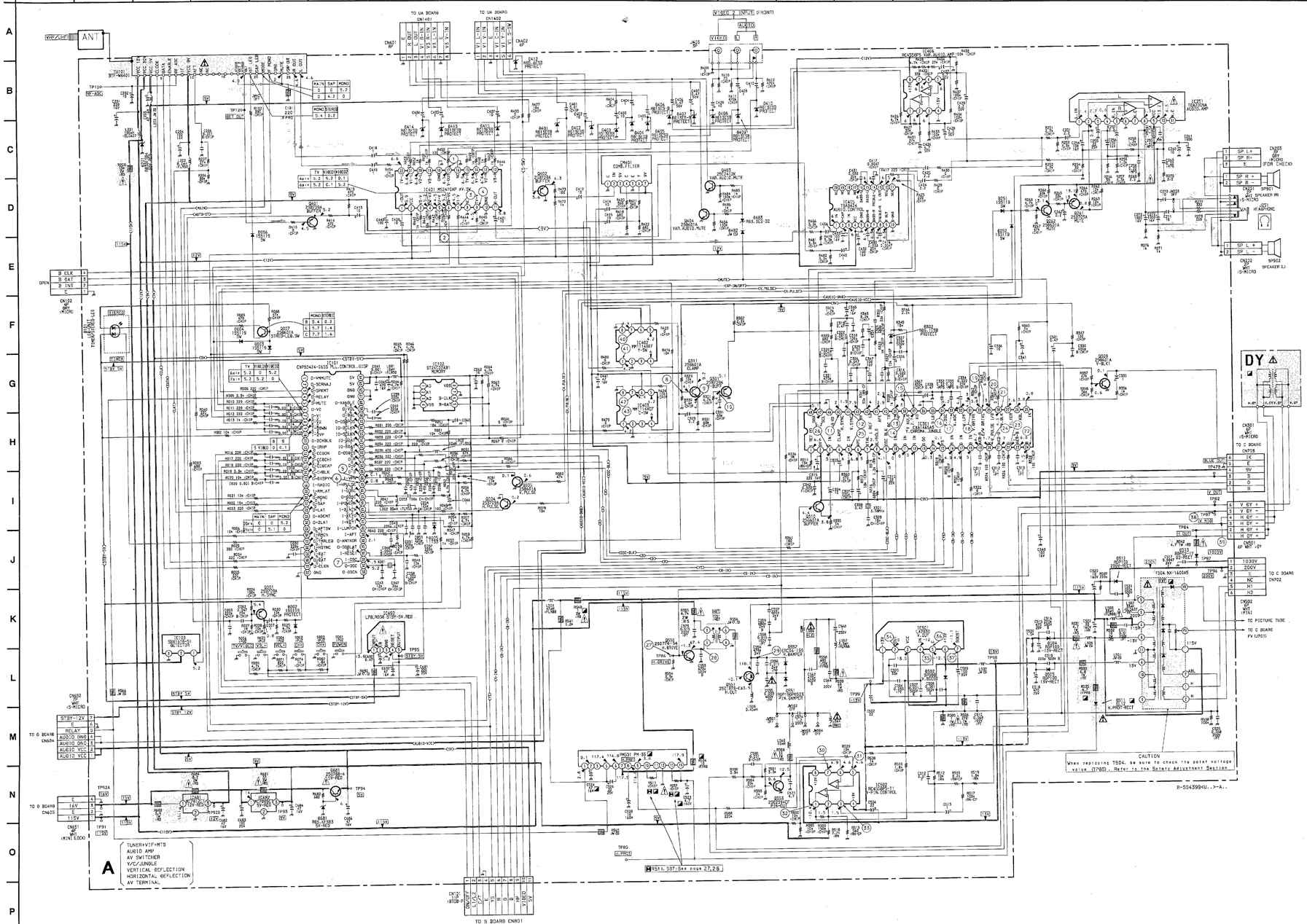


A BOARD IC501 LA7830



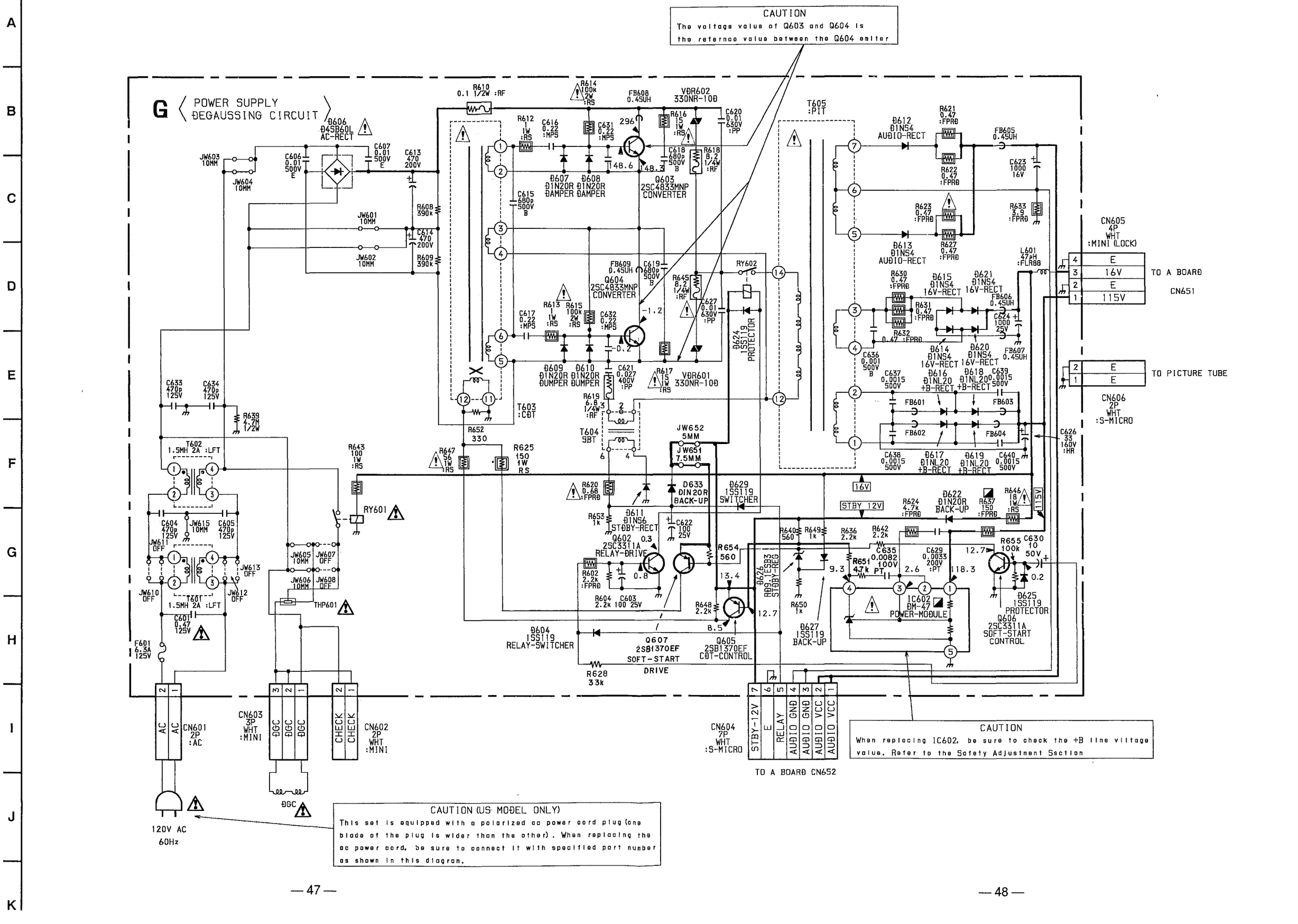
A BOARD IC690 L78LR05D





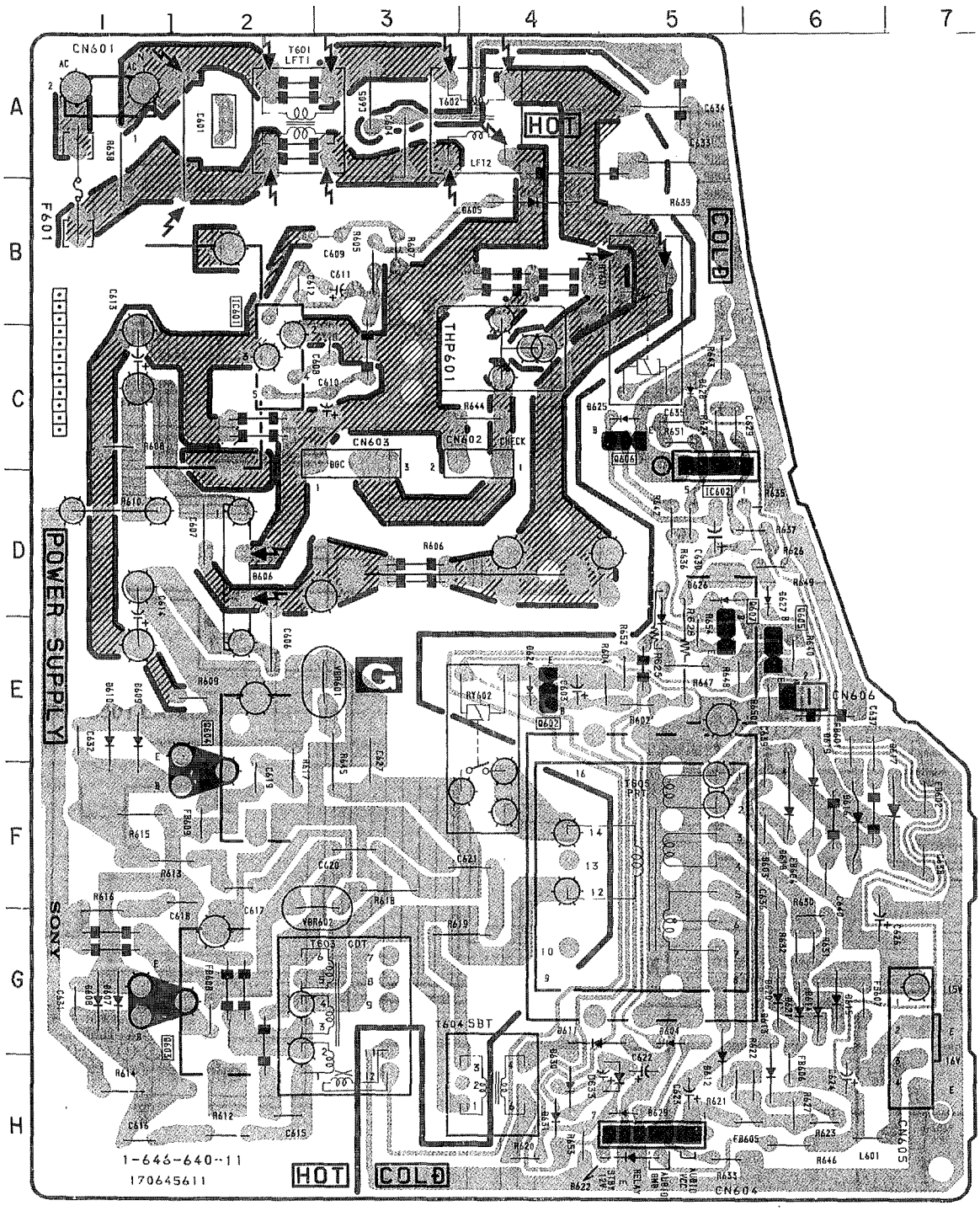
— A Board —

① TV IN 2.6 Vp-p (H)	① VIDEO IN 2.2 Vp-p (H)	② VIDEO 2 1 Vp-p (H)
③ VIDEO 1 1 Vp-p (H)	④ TV IN 1.2 Vp-p (H)	⑤ 5 Vp-p (V)
⑥ 5 Vp-p (H)	⑦ 5 Vp-p (4.2MHz)	⑧ 0.8 Vp-p (H)
⑨ 2.3 Vp-p (H)	⑩ 2 Vp-p (H)	⑪ 1.6 Vp-p (H)
⑫ 1.6 Vp-p (H)	⑬ 5.3 Vp-p (H)	⑭ 0.35Vp-p (V)
⑮ 4 Vp-p (H)	⑯ 1.6 Vp-p (V)	⑰ 2 Vp-p (V)
⑱ 1.3 Vp-p (V)	⑲ 2 Vp-p (V)	⑳ 3.6 Vp-p (V)
㉑ 4.6 Vp-p (V)	㉒ 4.2 Vp-p (H)	㉓ 4 Vp-p (H)
㉔ 4.2 Vp-p (H)	㉕ 2.4 Vp-p (H)	㉖ 2.4 Vp-p (H)
㉗ 3.5 Vp-p (H)	㉘ 150 Vp-p (H)	㉙ 880 Vp-p (H)
㉚ 17 Vp-p (V)	㉛ 1 Vp-p (V)	㉜ 4 Vp-p (V)
㉝ 0.5 Vp-p (V)	㉞ 52 Vp-p (V)	㉟ 3.2 Vp-p (V)
㊱ 4.5 Vp-p (V)	㊲ 3 Vp-p (V)	㊳ 1.5 Vp-p (V)
㊴ 195 Vp-p (H)	㊵ S VIDEO IN 2 Vp-p (H)	㊶ S VIDEO IN 1 Vp-p (H)
㊷ S VIDEO IN 1.3 Vp-p (H)	㊸ S VIDEO IN 0.7 Vp-p (H)	


G POWER SUPPLY ĐEGAUSSING CIRCUIT
CAUTION
The voltage value of Q603 and Q604 is the reference value between the Q604 emiter
CAUTION (US MODEL ONLY)
This set is equipped with a polarized ac power cord plug (one blade of the plug is wider than the other). When replacing the ac power cord, be sure to connect it with specified part number as shown in this diagram.
CAUTION
When replacing IC602, be sure to check the +B line village value. Refer to the Safety Adjustment Section
CN605 4P WHT :MINI (LOCK)
TO A BOARĐ CN651
CN606 2P WHT :S-MICRO
TO PICTURE TUBE
CN601 2P :AC
CN603 3P WHT :MINI
CN602 2P WHT :MINI
CN604 7P WHT :S-MICRO
TO A BOARĐ CN652
120V AC 60Hz
T603 :CĐT
T604 9BT
T605 :PIT
Q603 2SC4833MNP CONVERTER
Q604 2SC4833MNP CONVERTER
Q602 2SC3311A RELAY-DRIVE
Q607 2SB1370EF SOFT-START DRIVE
Q605 2SB1370EF CĐT-CONTROL
Q606 2SC3311A SOFT-START CONTROL
IC602 ĐM-47 POWER-MODULE
THP601
RY601
RY602
VĐR601 330NR-10Đ
VĐR602 330NR-10Đ
Đ624 1SS119 PROTECTOR
Đ625 1SS119 PROTECTOR
Đ626 RD5.1ES33 STĐBY-REG
Đ627 1SS119 BACK-UP
Đ629 1SS119 SWITCHER
Đ604 1SS119 RELAY-SWITCHER
D633 DIN20R BACK-UP
Đ622 ĐIN20R BACK-UP
Đ606 Đ4SB60L AC-RECT
Đ612 ĐIN54 AUĐIO-RECT
Đ613 ĐIN54 AUĐIO-RECT
Đ615 ĐIN54 16V-RECT
Đ621 ĐIN54 16V-RECT
Đ614 ĐIN54 16V-RECT
Đ620 ĐIN54 16V-RECT
Đ617 ĐINL20 +B-RECT
Đ618 ĐINL20 +B-RECT
Đ619 ĐINL20 +B-RECT
Đ607 ĐIN20R ĐAMPER
Đ608 ĐIN20R ĐAMPER
Đ609 ĐIN20R ĐUMPER
Đ610 ĐIN20R ĐUMPER
Đ611 ĐIN56 STĐBY-RECT
FB601
FB602
FB603
FB604
FB605 0.45UH
FB606 0.45UH
FB607 0.45UH
FB608 0.45UH
FB609 0.45UH
L601 47µH :FLR8Đ
T602 1.5MH 2A :LFT
T601 1.5MH 2A :LFT
F601 6.3A 125V
JW601 10MM
JW602 10MM
JW603 10MM
JW604 10MM
JW605 10MM
JW606 10MM
JW607 OFF
JW608 OFF
JW610 OFF
JW611 OFF
JW612 OFF
JW613 OFF
JW615 10MM
JW651 7.5MM
JW652 5MM
16V
STĐBY 12V
115V
AC
AC
ĐGC
ĐGC
ĐGC
CHECK
CHECK
STĐBY-12V
E
RELAY
AUĐIO GNĐ
AUĐIO GNĐ
AUĐIO VCC
AUĐIO VCC

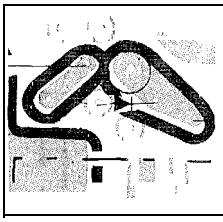
G [POWER SUPPLY, DEGAUSSING CIRCUIT]

— G Board —



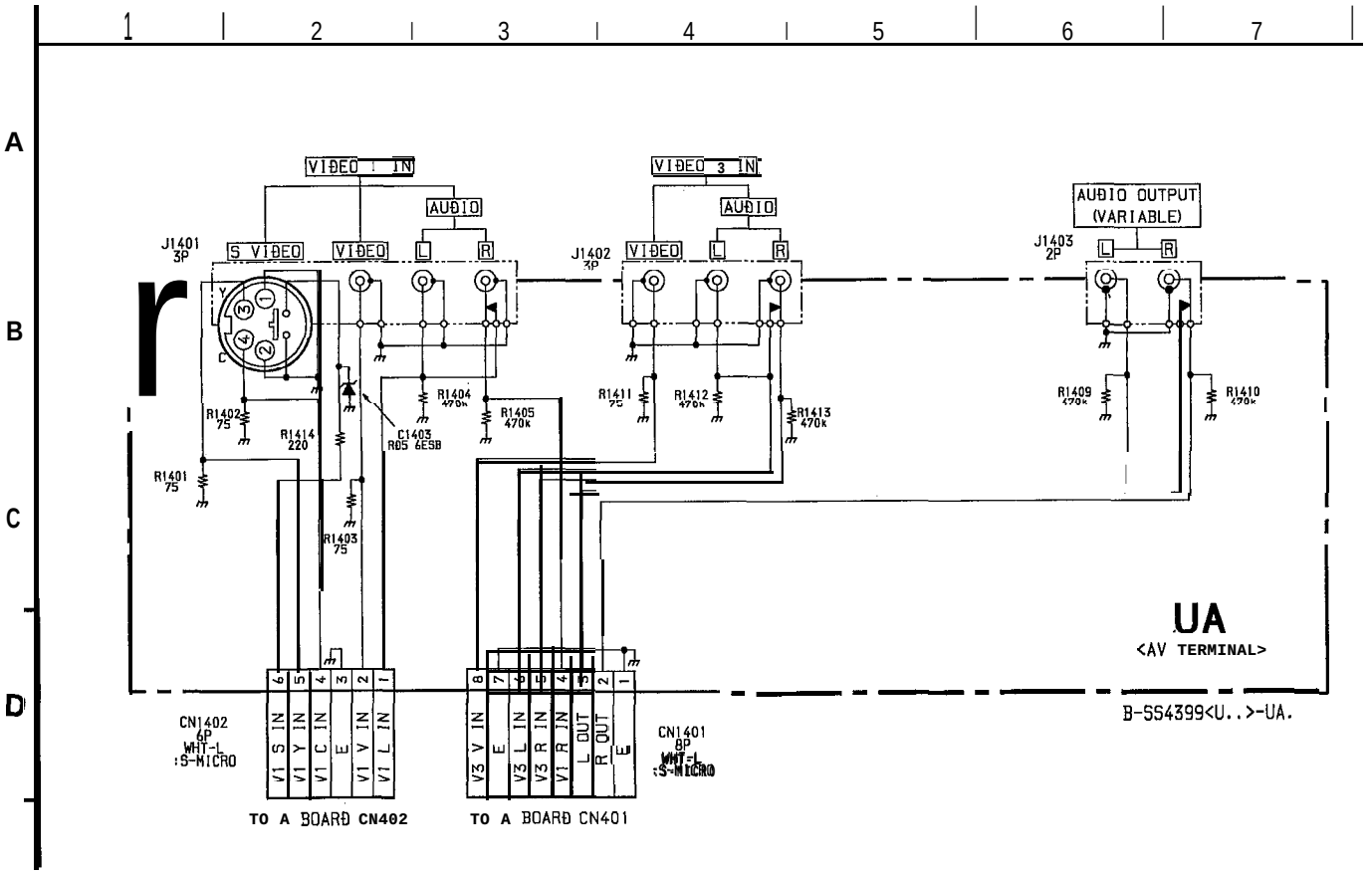
- G Board —

IC	
IC601	B-3
IC602	c-5
TRANSISTOR	
Q602	E-4
Q603	G-I
Q604	F-2
Q605	E-6
Q606	c-5
Q607	E-5
DIODE	
D604	G-5
D605	B-4
D606	D-2
D607	G-I
D606	G-I
D609	E-I
D610	E-I
D611	G-4
D612	H-5
D613	H-6
D614	G-6
D615	G-6
D616	F-6
0617	F-7
D616	F-6
D619	F-6
0620	G-6
D621	G-6
D622	H-5
0624	E-4
D625	c-5
D627	D-6
D629	H-5
D630	H-4
D632	E-4



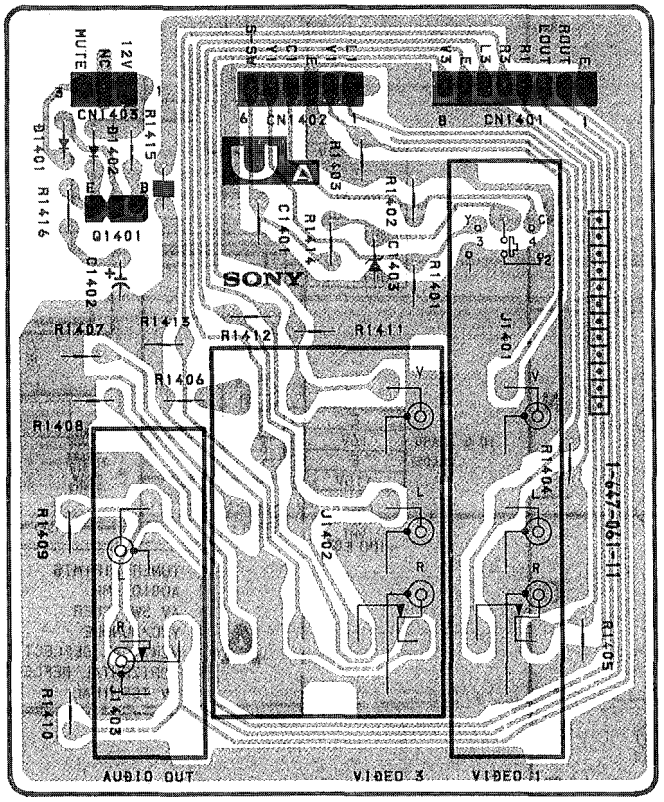
NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



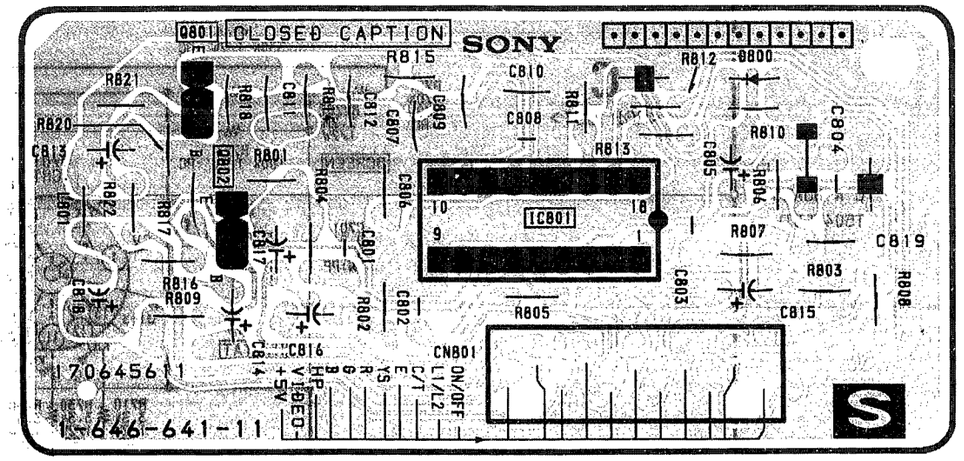
UA [AV TERMINAL]

— UA Board —

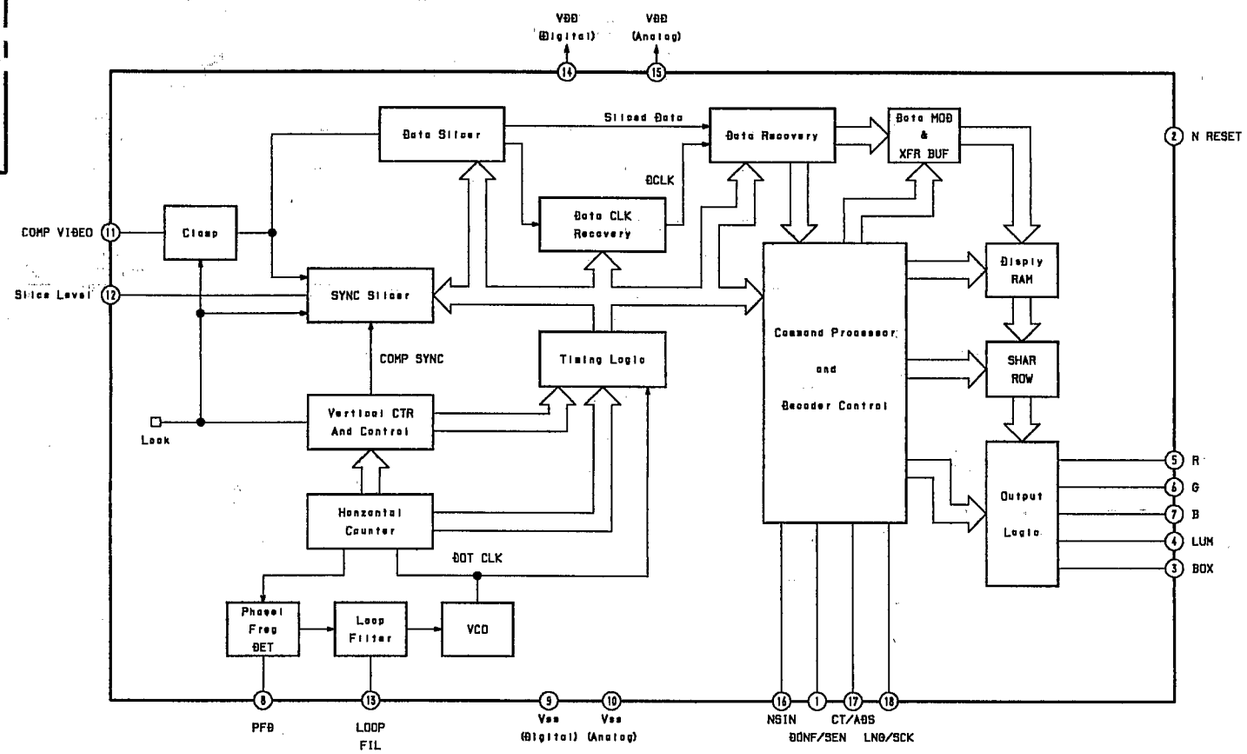


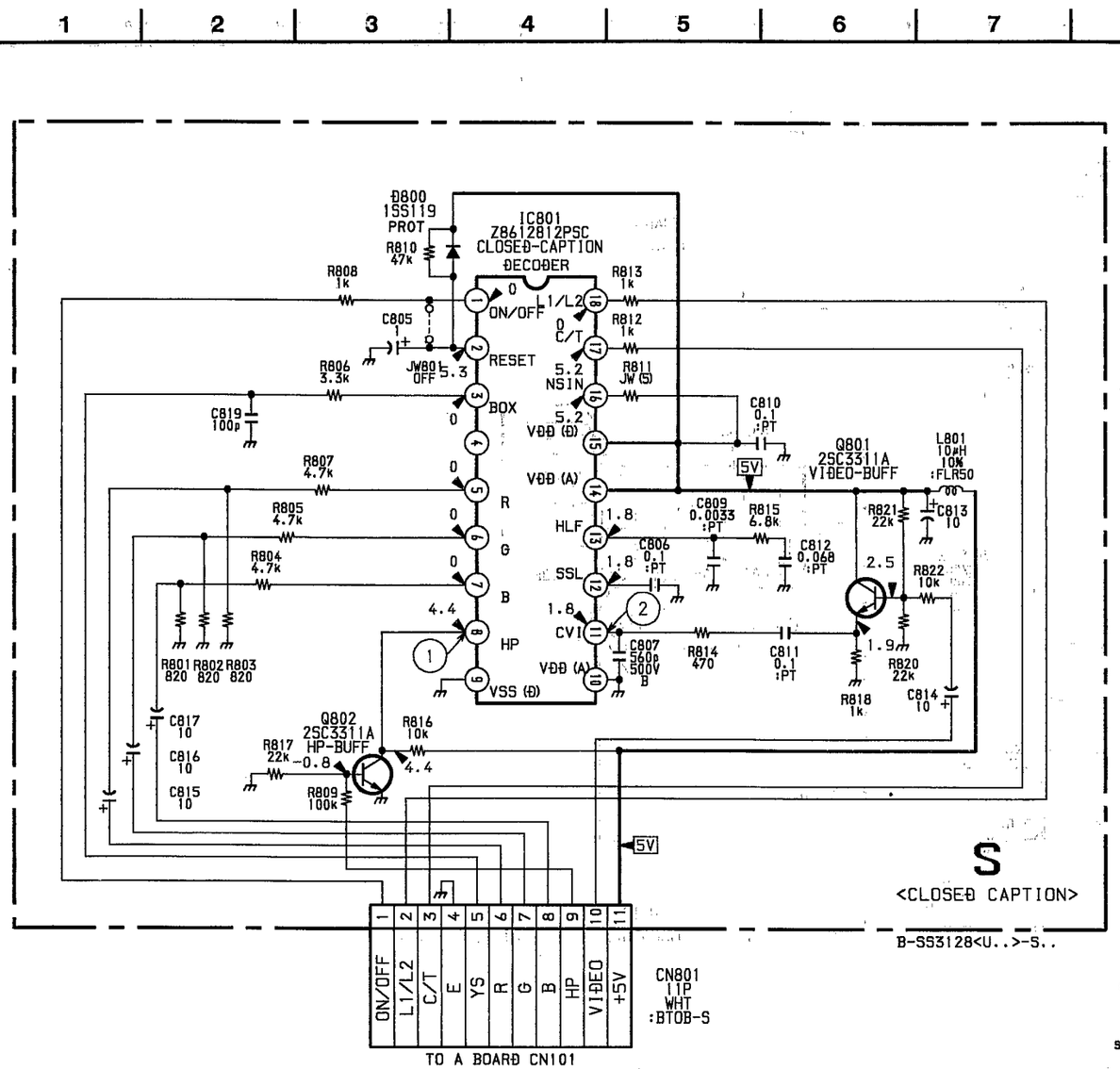
S [CLOSED CAPTION]

— S Board —

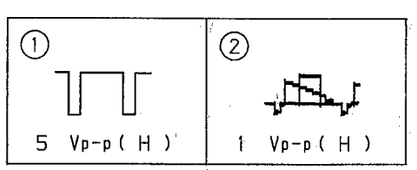


S BOARD IC801 Z8612812PSC





— S Board —



C
<RGB OUT>

FV
TO A BOARD
T504 (FBT)

R702 330k 1/2W :RC
L701 47mH :EL0607
R701 470k 1/2W :RC
RV702 2.2M 1/2W
SCREEN
R703 100k 1/2W :RC
SCREEN MIN-MAX 291-1022
J701 :CRT
C704 680p 2kV B
RV701 110M
H.STAT
C701 0.01 630V 10%:PP
CV
G4 G2 G1-1 G1-2 G1-3 H1 H2 KR KB KG
149.9 154.9 149
R704 1.2 2W :RS
JW701 5MM
R706 220k 1/2W :RC
R710 3.3k 1/2W :RC
R730 3.3k 1/2W :RC
R750 3.3k 1/2W :RC
200V
R700 100 1/2W :RC
R712 15k 3W :RS
R732 15k 3W :RS
R752 15k 3W :RS
D771 1SS119 SPEED-UP
D772 1SS119 SPEED-UP
D773 1SS119 SPEED-UP
148.6
153.6
47.7
C771 680p B
C772 680p B
C773 680p B
Q771 2SA1091-O R-IK-DET
Q772 2SA1091-O G-IK-DET
Q773 2SA1091-O B-IK-DET
155.9
Q711 2SC3271F-N R-OUT
Q731 2SC3271F-N G-OUT
Q751 2SC3271F-N B-OUT
150.3
150.2
0.8
R771 220 :FPRD
R772 220 :FPRD
R773 220 :FPRD
9.2
8.6
C711 680p B
C731 680p B
C751 680p B
D711 1SS119 R-PROTECT
D731 1SS119 G-PROTECT
D751 1SS119 B-PROTECT
D777 RD3.9ESB1 CLAMP
9V
C707 0.001 B
C706 22 25V
Q712 2SC3311A R.AMP
Q732 2SC3311A G.AMP
Q752 1.8 2SC3311A B.AMP
1.6
1.8
1.2
1.1
12.1
R711 100
R731 100
R751 100
TP47R R OUT
TP47B B OUT
D770 1SS119 PROTECTOR
R774 47k
R776 220
0.4
0.7
0
Q770 2SA1309A BUFFER
R770 22k
R775 1k
R790 1k
R791 470
R716 330
D792 1SS119 B-GANMA
D790 1SS119 R-GANMA
D791 1SS119 G-GANMA
C712 560p B
R717 10
R736 330
C732 470p B
R737 10
C752 560p B
R757 10
R756 330

CN702 6P WHT :MINI

1	1000V
2	200V
3	E
4	NC
5	H1
6	H2

TO A BOARD CN502

CN703 6P WHT :S-MICRO

R	1
G	2
B	3
9V	4
E	5
IK	6

TO A BOARD CN301

KG KB G2
V901 A51JUH51X PICTUER TUBE
H
CV KR G1 G4 HV
TO A BOARD T504 (FBT)
TO G BOARD CN606

CN701 1P
1 E

CAUTION
Be sure connect the commector CN701 for safety.

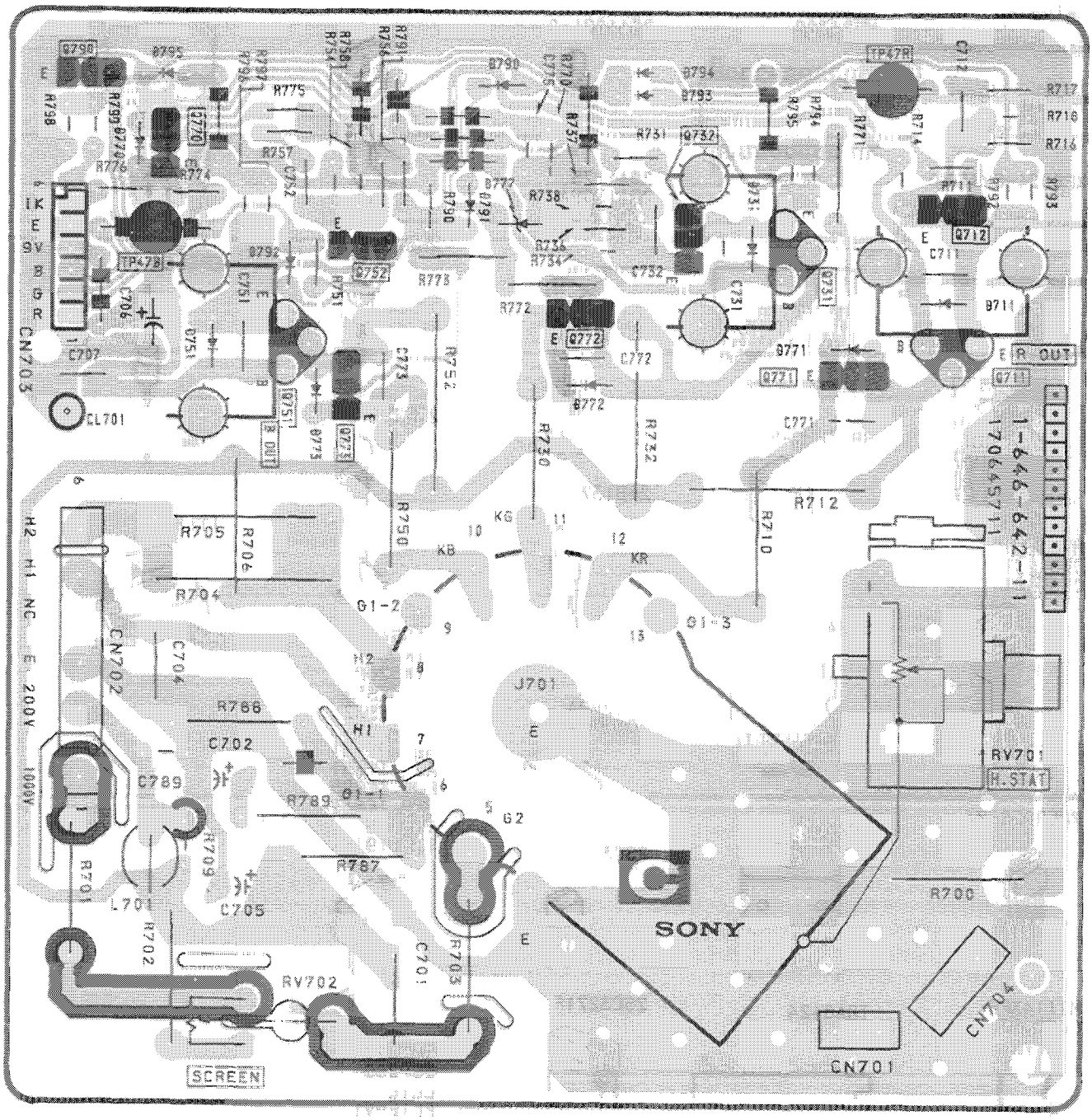
B-SS3128<U..>-C..

— C Board —

① 24 Vp-p (H)	② 175 Vp-p (H)	③ 175 Vp-p (H)
④ 175 Vp-p (H)	⑤ 4 Vp-p (H)	⑥ 4 Vp-p (H)
⑦ 4 Vp-p (H)		

C [R.G.B. OUT]

— C Board —

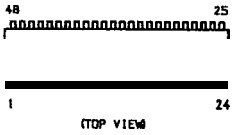


NOTE:

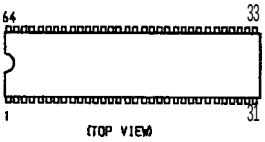
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

6-4. SEMICONDUCTORS

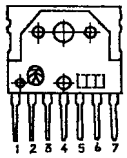
CXA1465AS



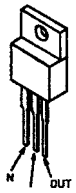
CXP8024-SV4397



LA7830

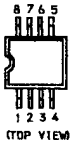


LM7812CT
MC781 2CT
MC7809CT

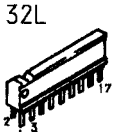


L78LR05Ð-MA

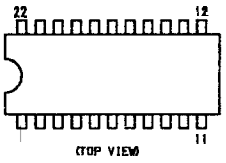
MM1114XFF
RC4558PS



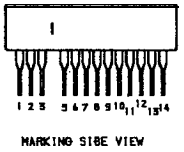
M51132L



M52470AP
M52470P



PM-35



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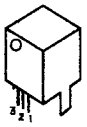
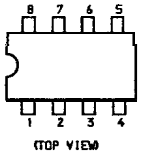


ST24C02AB1



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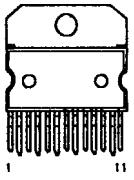
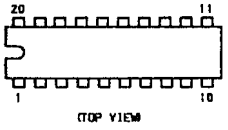


TÐA8424



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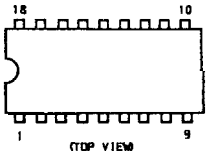

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2SA1091-0

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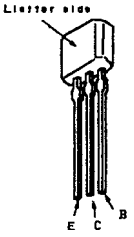
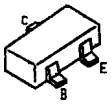
2SA1309A
2SC2785
2SC3311A



2SB1370

2SB709A
2SÐ601A



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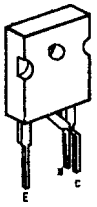
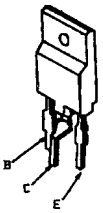
2SC3271F



2SC4833MNP

2SÐ1878



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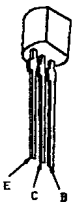
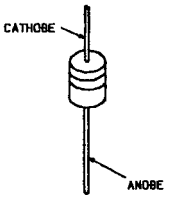
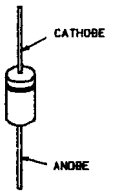
2SÐ788



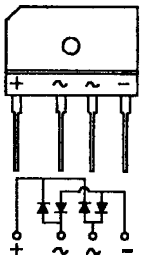
Ð1NS4
Ð1NS6
Ð1NS20R
RÐ13ESB2
RÐ30ESB2
RÐ30ESB4
RÐ3.9ESB1
RÐ5.1ESB1
RÐ5.6ESB3
RÐ9.1ESB3
1SS119
1SS119TÐ



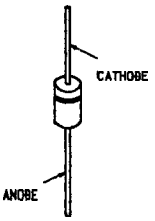
Ð1NL20
EGP20G
EL1E
EL1E-V1
GPO80
RGP02-17
RGP02-17PKG23
RGP10GPKG3
RGP15GPKG23



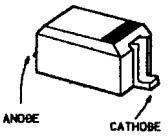
Ð4SB60L



ERC06-15S



1T33



SECTION 7
EXPLODED VIEWS

NOTE:

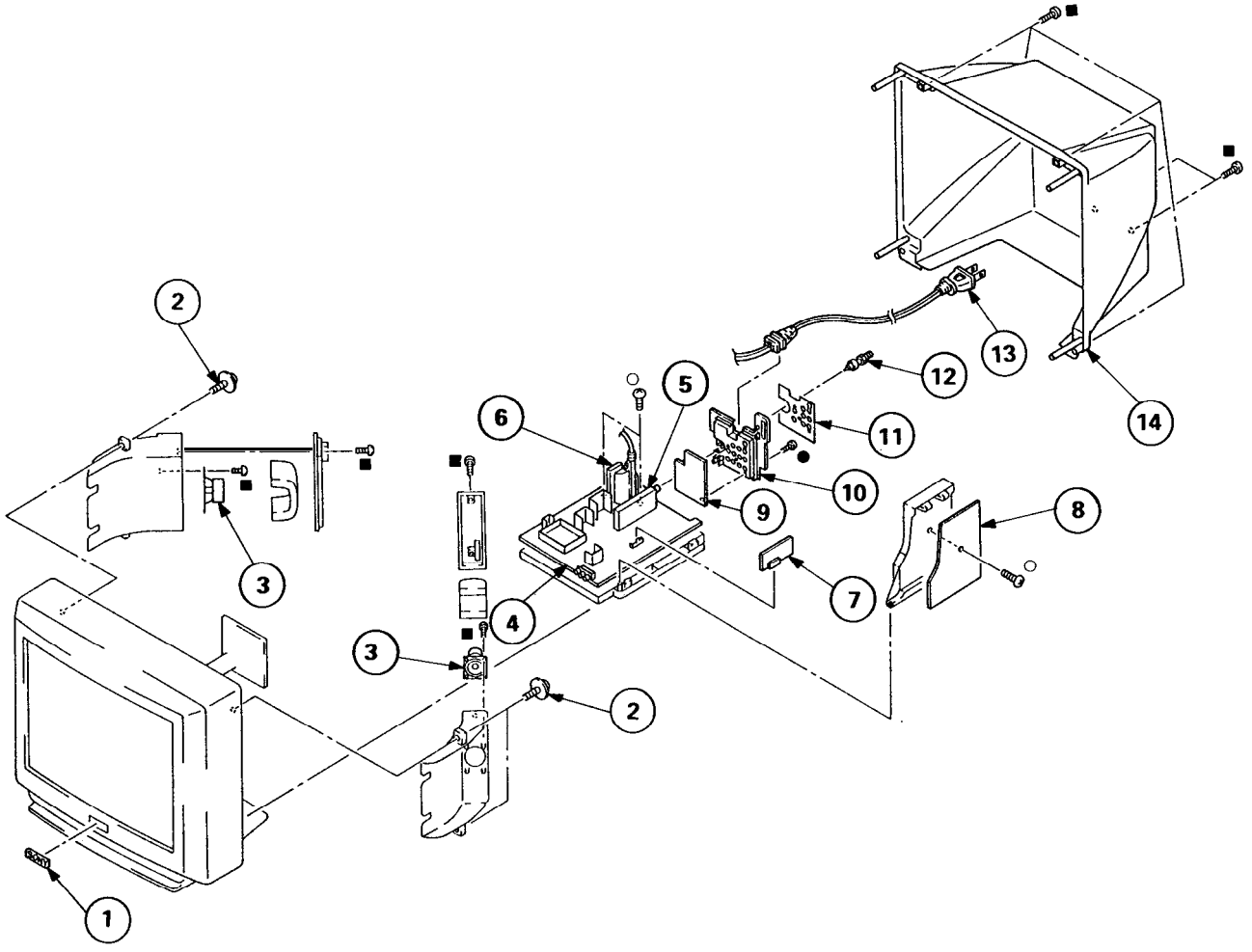
- **Items with no part number and no description are not stocked because they are seldom required for routine service.**
- **The construction parts of an assembled part are indicated with a collation number in the remark column.**
- **Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.**

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

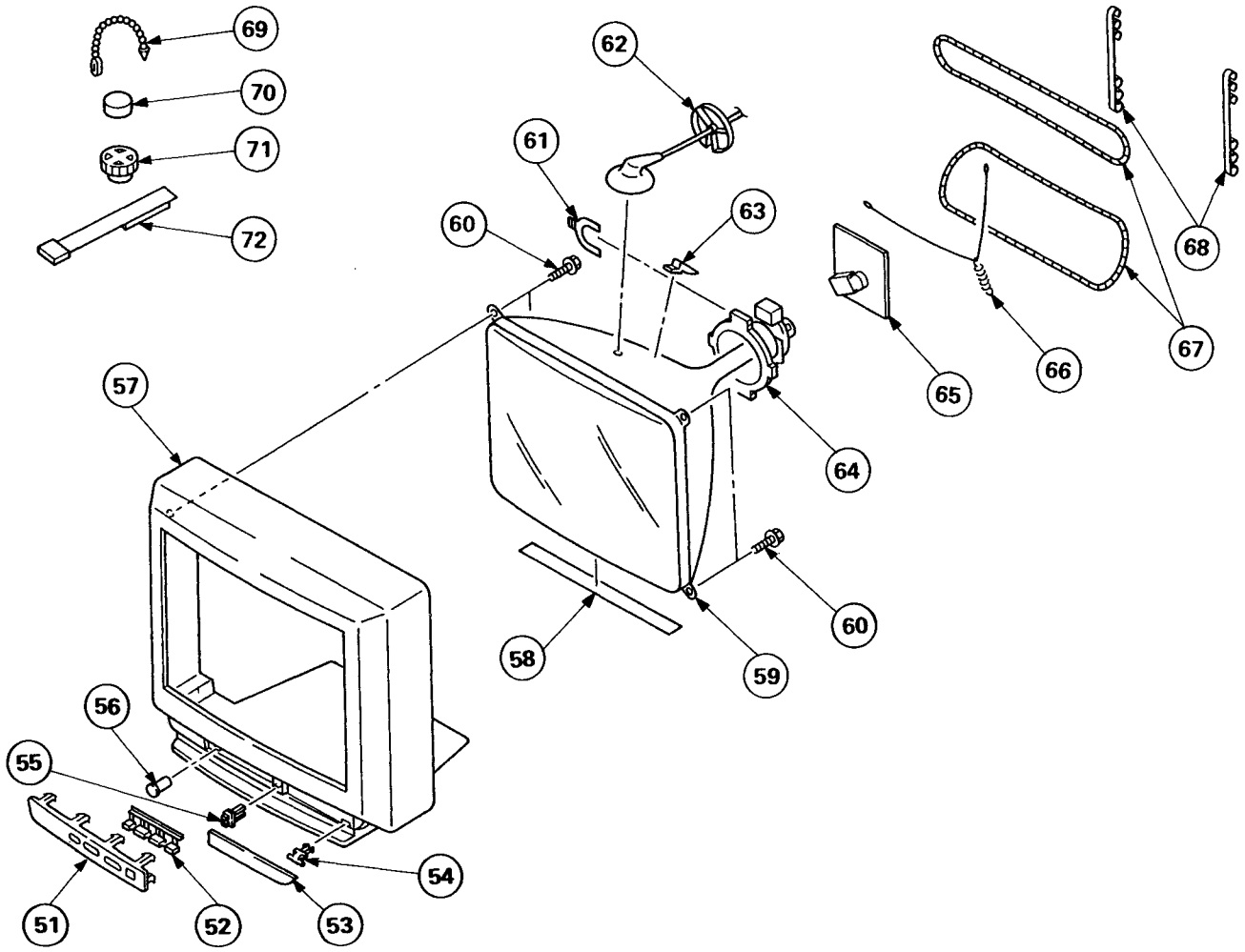
7-1. CHASSIS

. : **BVTP3 x 12 7-685-648-79 (BLACK)**
○ : **BVTP3 X 12 7-685-648-71**
■ : **BVTP4 × 18 7-685-663-79 (BLACK)**



Ref. No.	Part No.	Description	Remark
1	4-394-072-01	EMBLEM (NO. 8). SONY	
2	4-384-096-01	SCREW (4X16), TAPPING, +P	
3	1-504-304-11	SPEAKER (8CM)	
4	*A-1297-080-A	A BOARD, COMPLETE	
5	⚠8-598-039-01	TUNER BTF-WA401	
6	⚠1-453-141-11	TRANSFORMER ASSY, FLYBACK (NX-1600A5)	
7	*1-646-641-11	S BOARD	
8	*A-1316-146-A	G BOARD, COMPLETE	
9	*1-647-061-11	UA BOARD	
10	4-039-851-01	TERMINAL BOARD, ANTENNA	
11	4-040-348-01	LABEL, TERMINAL	
12	1-573-657-11	PLUG, F-PIN	
13	⚠1-751-057-11	CORD, POWER (WITH CONNECTOR)	
14	4-040-352-01	COVER, REAR	

7-2. PICTURE TUBE



The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la **securite.**
Ne les remplacer que par une piece **portant le** numero **specifie.**

Ref. No.	Part No.	Description	Remark
51	4-040-346-01	PANEL, CONTROL	
52	4-040-345-01	BUTTON, MULTI	
53	4-040-347-01	DOOR, CONTROL	
54	3-703-035-11	SHAFT, LID	
55	✱4-031-413-01	GUIDE, LIGHT	
56	✱4-389-517-01	GUIDE (R), LIGHT	
57	X-4031-130-1	CABINET ASSY (WITH BEZEL ASSY)	
58	4-385-725-01	SHEET, LOTTING	
59	⚠8-738-764-05	PICTURE TUBE (A51JUH51X)	
60	4-365-808-01	SCREW (5), TAPPING	
61	1-452-277-00	MAGNET, BMC	
62	✱3-704-372-01	HOLDER, HV CABLE	
63	3-704-495-01	SPACER, DY	
64	⚠1-451-280-11	DEFLECTION YOKE (Y21PXA2)	
65	*A-1331-246-A	C BOARD, COMPLETE	
66	✱4-375-394-01	SPRING, TENSION	
67	⚠1-426-358-11	COIL, DEMAGNETIZATION	
68	✱4-369-319-00	BAND, COIL	
69	4-308-870-00	CLIP, LEAD WIRE	
70	1-452-032-00	MAGNET, DISC; 10MM ϕ	
71	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM ϕ	
72	X-4308-815-0	PERMALLOY ASSY, CONVERGENCE	

SECTION 8
ELECTRICAL PARTS LIST

A

NOTE:

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

- *Items marked " * " are not stocked since they* are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

When indicating parts by reference number, please include the board name.

- The components identified by ❑ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
Should replacement be reauired. replace only with the value orginally used.

Ref. No.	Part No.	Description					Remark
	*A-1297-080-A	A BOARD, COMPLETE					
		**********					
	4-382-854-11	SCREW (M3X10), P, SW (+)					
		< CAPACITOR >					
C002	l-163-809-11	CERAMIC	CHIP	0. 047uF	10%	25v	
C003	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
C007	l-124-903-11	ELECT		1uF	20%	50V	
C011	l-163-009-11	CERAMIC	CHIP	0. OOluF	10%	5ov	
C012	l-163-009-11	CERAMIC	CHIP	0. OOluF	10%	5ov	
co13	l-163-009-11	CERAMIC	CHIP	0. OOluF	10%	5ov	
co14	l-163-009-11	CERAMIC	CHIP	0. OOluF	10%	5ov	
co15	l-163-009-11	CERAMIC	CHIP	0. 001uF	10%	5ov	
C016	l-163-009-11	CERAMIC	CHIP	0. 001uF	10%	5ov	
co17	l-163-009-11	CERAMIC	CHIP	0. OOluF	10%	5ov	
C018	l-163-009-11	CERAMIC	CHIP	0. 001uF	10%	5ov	
co19	l-163-009-11	CERAMIC	CHIP	0. OOluF	10%	5ov	
co20	l-163-009-11	CERAMIC	CHIP	0. 001uF	10%	5ov	
co30	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
co39	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
co40	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
co41	l-163-009-11	CERAMIC	CHIP	0. OOluF	10%	5ov	
co43	l-163-159-00	CERAMIC	CHIP	12PF	2%	5ov	
co45	l-126-103-11	ELECT		470uF	20%	16V	
C046	l-163-017-00	CERAMIC	CHIP	0. 0047uF	5%	5ov	
co47	l-104-896-91	CERAMIC	CHIP	24PF	2%	5ov	
co49	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
co50	l-163-109-00	CERAMIC	CHIP	47PF	5%	5ov	
co51	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
C052	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
co53	l-163-121-00	CERAMIC	CHIP	150PF	5%	5ov	
co54	1-163-253-11	CERAMIC	CHIP	120PF	5%	5ov	
co55	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
C056	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
co57	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
C058	l-163-037-11	CERAMIC	CHIP	0. 022uF	10%	25V	
co59	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
C060	l-124-903-11	ELECT		1uF	20%	5ov	
C062	l-124-907-11	ELECT		10uF	20%	5ov	
C066	l-124-903-11	ELECT		1uF	20%	5ov	
C101	l-249-409-11	CARBON		220 5%	1/4W	F	
C201	l-124-120-11	ELECT		220uF	20%	25V	
C202	l-124-907-11	ELECT		10uF	20%	5ov	
C203	1-124-477-11	ELECT		47uF	20%	25V	
C204	l-126-101-11	ELECT		100uF	20%	16V	
C206	l-163-009-11	CERAMIC	CHIP	0. OOluF	10%	5ov	
C251	1-124-925-11	ELECT		2. 2uF	20%	100V	
C254	l-126-101-11	ELECT		100uF	20%	16V	
C255	1-124-916-11	ELECT		22uF	20%	63V	
C256	l-126-101-11	ELECT		100uF	20%	16V	
C257	1-124-925-11	ELECT		2. 2uF	20%	100V	
C258	l-136-169-00	FILM		0. 22uF	5%	5ov	
c259	l-136-173-00	FILM		0. 47uF	5%	5ov	
C260	l-124-907-11	ELECT		10uF	20%	5ov	
C261	l-124-360-00	ELECT		1000uF	20%	16V	
C262	1-124-925-11	ELECT		2. 2uF	20%	100V	
C263	l-136-169-00	FILM		0. 22uF	5%	5ov	
C270	l-124-907-11	ELECT		10uF	20%	5ov	
C271	l-124-907-11	ELECT		10uF	20%	5ov	
C272	l-124-360-00	ELECT		1000uF	20%	16V	
C273	l-124-360-00	ELECT		1000uF	20%	16V	
C301	l-163-113-00	CERAMIC	CHIP	68PF	5%	5ov	
C304	l-124-907-11	ELECT		10uF	20%	5ov	
C305	l-124-903-11	ELECT		1uF	20%	5ov	
C306	l-163-035-00	CERAMIC	CHIP	0. 047uF		5ov	
C307	l-163-125-00	CERAMIC	CHIP	220PF	5%	5ov	
C308	l-124-902-00	ELECT		0. 47uF	20%	5ov	
C309	l-163-099-00	CERAMIC	CHIP	18PF	5%	5ov	
C310	1-124-916-11	ELECT		22uF	20%	63V	
c311	1-137-399-11	FILM		0. 1uF	5%	5ov	
C312	1-137-399-11	FILM		0. 1uF	5%	5ov	
c313	1-137-399-11	FILM		0. 1uF	5%	5ov	
c314	l-163-037-11	CERAMIC	CHIP	0. 022uF	10%	25V	
c315	l-124-120-11	ELECT		220uF	20%	25V	
C318	l-163-117-00	CERAMIC	CHIP	100PF	5%	5ov	
c319	l-124-902-00	ELECT		0. 47uF	20%	5ov	
C320	l-163-017-00	CERAMIC	CHIP	0. 0047uF	5%	5ov	
C321	l-163-005-11	CERAMIC	CHIP	470PF	10%	5ov	
C322	l-163-011-11	CERAMIC	CHIP	0. 0015uF	10%	5ov	
C323	l-163-007-11	CERAMIC	CHIP	680PF	10%	5ov	
C324	l-124-903-11	ELECT		1uF	20%	5ov	
C325	1-164-232-11	CERAMIC	CHIP	0. 01uF		5ov	
C326	l-124-903-11	ELECT		1uF	20%	5ov	
C327	l-102-244-00	CERAMIC		220PF	10%	5oov	
C328	l-124-902-00	ELECT		0. 47uF	20%	50V	
c329	1-124-925-11	ELECT		2. 2uF	20%	100V	

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Ref. No.	Part No.	Description			Remark
C330	l-163-007-11	CERAMIC CHIP	680PF	10%	50V
C332	l-136-169-00	FILM	0. 22uF	5%	5ov
c333	l-136-169-00	FILM	0. 22uF	5%	5ov
c334	l-163-037-11	CERAMIC CHIP	0. 022uF	10%	25v
c335	l-124-903-11	ELECT	1uF	20%	5ov
C336	l-124-907-11	ELECT	10uF	20%	5ov
C340	l-126-101-11	ELECT	100uF	20%	16V
c341	l-124-903-11	ELECT	1uF	20%	5ov
C342	l-163-033-00	CERAMIC CHIP	0. 022uF		5ov
c345	1-124-477-11	ELECT	47uF	20%	25v
C347	l-126-101-11	ELECT	100uF	20%	16V
C401	l-163-031-11	CERAMIC CHIP	0. 01uF		5ov
C402	l-124-907-11	ELECT	10uF	20%	5ov
C403	l-124-907-11	ELECT	10uF	20%	5ov
C404	l-124-903-11	ELECT	1uF	20%	5ov
C405	l-124-903-11	ELECT	1uF	20%	5ov
C406	l-124-902-00	ELECT	0. 47uF	20%	5ov
C407	l-124-902-00	ELECT	0. 47uF	20%	5ov
C408	l-124-907-11	ELECT	10uF	20%	5ov
C409	l-124-903-11	ELECT	1uF	20%	5ov
C410	l-124-903-11	ELECT	1uF	20%	5ov
C412	l-124-907-11	ELECT	10uF	20%	5ov
c413	l-124-907-11	ELECT	10uF	20%	5ov
c414	l-124-907-11	ELECT	10uF	20%	5ov
c415	l-124-907-11	ELECT	10uF	20%	5ov
C416	l-163-017-00	CERAMIC CHIP	0. 0047uF	5%	5ov
c417	l-163-017-00	CERAMIC CHIP	0. 0047uF	5%	5ov
C418	l-124-903-11	ELECT	1uF	20%	5ov
c419	l-124-903-11	ELECT	1uF	20%	5ov
C420	l-124-907-11	ELECT	10uF	20%	5ov
C421	l-124-907-11	ELECT	10uF	20%	5ov
C424	1-124-925-11	ELECT	2. 2uF	20%	100V
C425	1-124-925-11	ELECT	2. 2uF	20%	100V
C426	1-124-92'7-11	ELECT	4. 7uF	20%	100V
C427	1-124-927-11	ELECT	4. 7uF	20%	100V
C428	1-124-925-11	ELECT	2. 2uF	20%	100V
c429	1-124-925-11	ELECT	2. 2uF	20%	100V
C430	1-163-989-11	CERAMIC CHIP	0. 033uF	10%	25V
c431	1-163-989-11	CERAMIC CHIP	0. 033uF	10%	25V
C432	l-126-101-11	ELECT	100uF	20%	16V
c433	l-126-101-11	ELECT	100uF	20%	16V
c434	l-124-903-11	ELECT	1uF	20%	5ov
c435	l-124-903-11	ELECT	1uF	20%	5ov
C436	l-124-903-11	ELECT	1uF	20%	5ov
C437	l-124-907-11	ELECT	10uF	20%	5ov
C440	l-126-101-11	ELECT	100uF	20%	16V
c441	1-124-477-11	ELECT	47uF	20%	25V
C442	l-124-903-11	ELECT	1uF	20%	5ov
C501	l-124-902-00	ELECT	0. 47uF	20%	5ov
C502	1-124-916-11	ELECT	22uF	20%	63V

Ref. No.	Part No.	Description			Remark
C504	l-130-489-00	MYLAR	0. 033uF	5%	5ov
C505	l-164-058-11	CERAMIC	33PF	5%	5ov
C506	1-124-916-11	ELECT	22uF	20%	63V
C507	l-102-038-00	CERAMIC	0. OOluF		
C508	l-102-038-00	CERAMIC	0. 001uF		
C509	1-124-122-11	ELECT	100uF	20%	5ov
C510	l-137-421-91	FILM	0. 068uF	10%	100V
C511	⚠1-108-421-91	MYLAR	0. 01uF	5%	200V
C512	l-164-096-11	CERAMIC	0. 01uF		50V
C513	l-124-903-11	ELECT	1uF	20%	5ov
C515	l-124-480-11	ELECT	470uF	20%	25V
C516	l-102-244-00	CERAMIC	220PF	10%	5oov
C517	l-162-114-00	CERAMIC	0. 0047uF		2KV
C518	l-124-480-11	ELECT	470uF	20%	25V
C519	l-102-244-00	CERAMIC	220PF	10%	5oov
C520	l-124-046-00	ELECT	10uF	20%	160V
C521	l-102-244-00	CERAMIC	220PF	10%	5oov
C522	l-123-024-21	ELECT	33uF		160V
C523	l-123-932-00	ELECT	4. 7uF	20%	160V
C524	1-124-477-11	ELECT	47uF	20%	25V
C525	l-106-387-00	MYLAR	0. 068uF	5%	200V
C526	1-124-916-11	ELECT	22uF	20%	63V
C528	l-124-046-00	ELECT	10uF	20%	160V
C553	l-102-228-00	CERAMIC	470PF	10%	5oov
C554	⚠1-162-134-91	CERAMIC	470PF	10%	2KV
C555	⚠1-104-750-91	FILM	0. 033uF	5%	400V
C556	⚠1-136-080-11	FILM	0. 01luF	3%	2KV
C557	1-162-116-00	CERAMIC	680PF	10%	2KV
C558	l-137-417-91	FILM	0. 015uF	10%	100V
c559	l-162-116-00	CERAMIC	680PF	10%	2KV
C562	l-102-228-00	CERAMIC	470PF	10%	5oov
C564	l-136-111-00	FILM	1uF	5%	200V
C568	1-124-634-11	ELECT	1uF	20%	250V
c571	1-124-927-11	ELECT	4. 7uF	20%	100V
c574	1-136-569-11	FILM	1. 2uF	5%	200V
c575	l-106-371-00	MYLAR	0. 015uF	5%	200V
C590	l-163-009-11	CERAMIC CHIP	0. OOluF	10%	5ov
C682	1-124-477-11	ELECT	47uF	20%	25V
C683	1-124-478-11	ELECT	100uF	20%	25V
C684	1-124-477-11	ELECT	47uF	20%	25V
C686	1-124-477-11	ELECT	47uF	20%	25V
C690	l-124-902-00	ELECT	0. 47uF	20%	5ov
C691	l-124-120-11	ELECT	220uF	20%	25V
C692	1-124-477-11	ELECT	47uF	20%	25V

〈 COMB FILTER 〉

CM401 1-466-912-11 FILTER BLOCK, COMB

〈 CONNECTOR 〉

CN101 *1-573-978-11 CONNECTOR, BOARD TO BOARD 11P

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Ref. No.	Part No.	Description	Remark
CN102	*1-560-124-00	PLUG, CONNECTOR (2.5MM) 4P	
CN201	*1-564-505-11	PLUG, CONNECTOR 2P	
CN202	*1-564-505-11	PLUG, CONNECTOR 2P	
CN203	*1-560-123-00	PLUG, CONNECTOR (2.5MM) 3P	
CN301	*1-564-509-11	PLUG, CONNECTOR 6P	
CN401	*1-564-511-11	PLUG, CONNECTOR 8P	
CN402	*1-564-509-11	PLUG, CONNECTOR 6P	
CN501	*1-580-798-11	CONNECTOR PIN (DY) 6P	
CN502	*1-508-768-00	PIN, CONNECTOR (5MM PITCH) 6P	
CN651	*1-691-135-11	PIN, CONNECTOR (PC BOARD) 4P	
CN652	*1-564-510-11	PLUG, CONNECTOR 7P	
		< DIODE >	
D002	8-719-911-19	DIODE 1SS119	
D003	8-719-911-19	DIODE 1SS119	
D004	8-719-911-19	DIODE 1SS119	
D005	g-713-300-57	DIODE 1T33	
D006	8-719-911-19	DIODE 1SS119	
D101	1-810-039-11	LED UNIT	
D201	g-719-110-72	DIODE RD30ES-B2	
D251	8-719-911-19	DIODE 1SS119	
D252	8-719-911-19	DIODE 1SS119	
D302	8-719-109-84	DIODE RD5.1ES-B1	
D401	g-719-110-36	DIODE RD13ES-B2	
D402	g-719-110-36	DIODE RD13ES-B2	
D403	g-719-110-36	DIODE RD13ES-B2	
D404	g-719-110-36	DIODE RD13ES-B2	
D405	g-719-110-36	DIODE RD13ES-B2	
D406	8-719-110-36	DIODE RD13ES-B2	
D407	g-719-110-36	DIODE RD13ES-B2	
D408	g-719-110-36	DIODE RD13ES-B2	
D409	g-719-110-36	DIODE RD13ES-B2	
D410	8-719-110-36	DIODE RD13ES-B2	
D412	8-719-109-88	DIODE RD5.6ES-B1	
D413	g-719-110-36	DIODE RD13ES-B2	
D414	g-719-110-36	DIODE RD13ES-B2	
D415	g-719-110-36	DIODE RD13ES-B2	
D483	g-719-109-66	DIODE RD3.3ES-B2	
D502	8-719-936-82	DIODE GP08DPKG3	
D504	8-719-936-84	DIODE RGP10GPKG3	
D509	8-719-936-84	DIODE RGP10GPKG3	
D511	⚠8-719-302-44	DIODE EL-1Z-V1	
D512	8-719-936-84	DIODE RGP10GPKG3	
D513	g-719-028-72	DIODE RGP02-17PKG23	
D551	8-719-979-85	DIODE EGP20G	
D552	g-719-945-80	DIODE ERC06-15S	
D681	8-719-109-90	DIODE RD5.6ES-B3	
		< IC >	
IC101	8-752-841-16	IC CXP80424-065S	
IC102	g-759-043-86	IC ST24C02AB1	
IC103	8-741-100-62	I C SBX1618-51	
IC251	⚠8-759-980-43	IC TDA2009A	
IC301	g-752-059-67	IC CXA1465AS	
IC401	8-759-634-69	IC M52470P	
IC402	8-759-088-00	IC MM1114XFF	
IC403	8-759-088-00	IC MM1114XFF	
IC405	8-759-090-21	IC TDA8424	
IC406	8-759-996-43	IC RC4558PS	
IC501	8-759-801-98	IC LA7830	
IC502	8-759-996-43	IC RC4558PS	
IC681	⚠8-759-013-09	IC MC7812CT	
IC682	⚠8-759-030-99	IC MC7809CT	
IC690	⚠8-759-805-37	IC L78LR05D-MA	
		< JACK >	
5251	1-750-264-11	JACK	
5403	1-750-267-11	JACK BLOCK, PIN (L TYPE) 3P	
		< COIL >	
L001	1-410-470-11	INDUCTOR 10uH	
L002	1-410-476-11	INDUCTOR 33uH	
L003	1-410-470-11	INDUCTOR 10uH	
L201	1-410-645-31	INDUCTOR 100uH	
L202	1-408-408-00	INDUCTOR 8.2uH	
L502	1-410-669-31	INDUCTOR 33uH	
L503	⚠1-412-531-61	INDUCTOR 33uH	
L551	1-412-533-61	INDUCTOR 47uH	
L555	1-422-613-11	COIL, AIR CORE	
L556	⚠1-459-769-13	COIL, HORIZONTAL LINEARITY	
L557	1-412-553-61	INDUCTOR 3.3mH	
L560	1-459-104-00	COIL (WITH CORE)	
L561	⚠1-459-390-31	COIL (WITH CORE)	
		< PROTECTOR MODULE >	
PM501	1-810-040-11	PROTECTOR MODULE PM-35	
		< IC LINK >	
PS201	⚠1-532-675-91	LINK, IC 1.5A	
		< TRANSISTOR >	
Q001	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q004	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q005	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q007	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q261	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q262	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q301	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q309	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q310	8-729-422-27	TRANSISTOR 2SD601A-Q	

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Ref. No.	Part No.	Description	Remark
Q311	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q401	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q402	8-729-422-36	TRANSISTOR 2SB709A-Q	
Q403	8-729-422-27	TRANSISTOR 2SD601A-Q	
Q404	8-729-422-27	TRANSISTOR 2SD601A-Q	
9550	8-729-140-96	TRANSISTOR 2SD774-34	
4551	8-729-821-87	TRANSISTOR 2SD1878CA	
Q553	8-729-019-01	TRANSISTOR 2SD2394-EF	
Q681	⚠8-729-320-61	TRANSISTOR 2SD788-34TZ	
		< RESISTOR >	
R001	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R003	l-216-045-00	METAL CHIP 680 5% 1/10W	
R004	l-216-033-00	METAL CHIP 220 5% 1/10W	
R005	l-216-033-00	METAL CHIP 220 5% 1/10W	
R006	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R008	l-216-033-00	METAL CHIP 220 5% 1/10W	
R009	l-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R010	l-216-033-00	METAL CHIP 220 5% 1/10W	
R011	l-216-033-00	METAL CHIP 220 5% 1/10W	
R012	l-216-033-00	METAL CHIP 220 5% 1/10W	
R013	l-216-049-00	METAL CHIP 1K 5% 1/10W	
R016	l-216-033-00	METAL CHIP 220 5% 1/10W	
R017	l-216-033-00	METAL CHIP 220 5% 1/10W	
R018	l-216-033-00	METAL CHIP 220 5% 1/10W	
R019	l-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R020	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R021	l-216-073-00	MBTAL CHIP 10K 5% 1/10W	
R022	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R023	l-216-033-00	METAL CHIP 220 5% 1/10W	
R025	l-216-039-00	METAL CHIP 390 5% 1/10W	
R026	l-216-097-00	METAL CHIP 100K 5% 1/10W	
R027	l-216-121-00	METAL CHIP 1M 5% 1/10W	
R028	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R029	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R030	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R031	l-216-033-00	METAL CHIP 220 5% 1/10W	
R032	l-216-033-00	MBTAL CHIP 220 5% 1/10W	
R033	l-216-033-00	METAL CHIP 220 5% 1/10W	
R034	l-216-033-00	METAL CHIP 220 5% 1/10W	
R035	l-216-041-00	METAL CHIP 470 5% 1/10W	
R036	l-216-033-00	METAL CHIP 220 5% 1/10W	
R037	l-216-033-00	METAL CHIP 220 5% 1/10W	
R038	l-216-033-00	METAL CHIP 220 5% 1/10W	
R039	l-216-049-00	METAL CHIP 1K 5% 1/10W	
R040	l-216-033-00	METAL CHIP 220 5% 1/10W	
R041	l-216-033-00	METAL CHIP 220 5% 1/10W	
R042	l-216-295-00	METAL CHIP 0 5% 1/10W	
R043	l-216-295-00	METAL CHIP 0 5% 1/10W	
R044	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R045	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R046	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R047	l-216-049-00	METAL CHIP 1K 5% 1/10W	
R048	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R049	l-216-025-00	METAL CHIP 100 5% 1/10W	
R050	l-216-049-00	MBTAL CHIP 1K 5% 1/10W	
R051	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R052	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R054	l-216-049-00	METAL CHIP 1K 5% 1/10W	
R056	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R057	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R059	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R060	l-216-033-00	METAL CHIP 220 5% 1/10W	
R064	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R065	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R066	l-216-295-00	METAL CHIP 0 5% 1/10W	
R067	l-216-295-00	METAL CHIP 0 5% 1/10W	
R071	l-216-047-00	METAL CHIP 820 5% 1/10W	
R074	l-216-049-00	METAL CHIP 1K 5% 1/10W	
R078	1-249-429-11	CARBON 10K 5% 1/4W	
R081	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R082	l-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R083	1-249-437-11	CARBON 47K 5% 1/4W	
R085	l-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R086	l-216-295-00	METAL CHIP 0 5% 1/10W	
R088	l-216-089-00	MBTAL CHIP 47K 5% 1/10W	
R089	l-216-041-00	METAL CHIP 470 5% 1/10W	
R091	l-216-089-00	METAL CHIP 47K 5% 1/10W	
R092	l-216-073-00	METAL CHIP 10K 5% 1/10W	
R095	l-216-033-00	METAL CHIP 220 5% 1/10W	
R096	l-216-033-00	METAL CHIP 220 5% 1/10W	
R097	l-216-033-00	METAL CHIP 220 5% 1/10W	
R102	l-216-039-00	METAL CHIP 390 5% 1/10W	
R203	⚠1-215-899-91	METAL OXIDE 15K 5% 2W F	
R206	1-216-689-11	METAL CHIP 39K 0.5% mow	
R207	l-216-083-00	METAL CHIP 27K 5% 1/10W	
R251	l-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R252	l-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R253	l-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R254	l-216-015-00	METAL CHIP 39 5% 1/10W	
R256	l-216-015-00	METAL CHIP 39 5% 1/10W	
R257	l-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R258	l-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R259	l-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R262	l-216-075-00	METAL CHIP 12K 5% 1/10W	
R263	l-216-075-00	METAL CHIP 12K 5% 1/10W	
R264	l-216-041-00	METAL CHIP 470 5% 1/10W	
R265	l-216-085-00	METAL CHIP 33K 5% 1/10W	
R266	l-216-085-00	METAL CHIP 33K 5% 1/10W	
R267	l-216-089-00	METAL CHIP 47K 5% 1/10W	

A

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece pottant le numero specifie.

Ref. No.	Part No.	Description			Remark
R268	l-216-065-00	METAL CHIP	4.7K	5% 1/10W	
R269	⚠1-247-767-91	CARBON	2.2	5% 1/6W	F
R270	⚠1-247-767-91	CARBON	2.2	5% 1/6W	F
R271	1-249-417-11	CARBON	1K	5% 1/4W	F
R272	1-249-411-11	CARBON	330	5% 1/4W	
R273	1-249-411-11	CARBON	330	5% 1/4W	
R276	1-249-417-11	CARBON	1K	5% 1/4W	F
R301	l-216-065-00	METAL CHIP	4. 7K	5% 1/10W	
R302	l-216-057-00	METAL CHIP	2. 2K	5% 1/10W	
R311	1-216-678-11	METAL CHIP	13K	0.5% 1/10W	
R312	l-216-079-00	METAL CHIP	18K	5% 1/10W	
R313	1-216-653-11	METAL CHIP	1. 2K	0.5% 1/10W	
R314	l-216-117-00	METAL CHIP	680K	5% 1/10W	
R315	l-216-051-00	METAL CHIP	1. 2K	5% 1/10W	
R319	l-216-295-00	METAL CHIP	0	5% 1/10W	
R320	l-216-295-00	METAL CHIP	0	5% 1/10W	
R321	l-216-295-00	METAL CHIP	0	5% 1/10W	
R322	l-216-295-00	METAL CHIP	0	5% 1/10W	
R323	l-216-121-00	METAL CHIP	1M	5% 1/10W	
R324	l-216-025-00	METAL CHIP	100	5% 1/10W	
R326	l-216-025-00	METAL CHIP	100	5% 1/10W	
R327	l-216-077-00	METAL CHIP	15K	5% 1/10W	
R328	l-216-025-00	METAL CHIP	100	5% 1/10W	
R329	l-216-073-00	METAL CHIP	10K	5% 1/10W	
R330	l-216-067-00	METAL CHIP	5. 6K	5% 1/10W	
R331	l-216-093-00	METAL CHIP	68K	5% 1/10W	
R335	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R336	l-216-121-00	METAL CHIP	1M	5% 1/10W	
R338	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R339	l-216-045-00	METAL CHIP	680	5% 1/10W	
R341	1-216-687-11	METAL CHIP	33K	0.5% 1/10W	
R343	l-216-071-00	METAL CHIP	8. 2K	5% 1/10W	
R345	1-249-429-11	CARBON	10K	5% 1/4W	
R346	1-249-421-11	CARBON	2. 2K	5% 1/4W	F
R347	l-216-025-00	METAL CHIP	100	5% 1/10W	
R351	l-216-085-00	METAL CHIP	33K	5% 1/10W	
R356	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R357	l-216-089-00	METAL CHIP	47K	5% 1/10W	
R358	l-216-091-00	METAL CHIP	56K	5% 1/10W	
R360	l-216-041-00	METAL CHIP	470	5% 1/10W	
R361	l-216-025-00	METAL CHIP	100	5% 1/10W	
R362	l-216-295-00	METAL CHIP	0	5% 1/10W	
R363	l-216-295-00	METAL CHIP	0	5% 1/10W	
R364	l-216-295-00	METAL CHIP	0	5% 1/10W	
R365	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R367	l-216-109-00	METAL CHIP	330K	5% 1/10W	
R404	l-216-295-00	METAL CHIP	0	5% 1/10W	
R409	l-216-295-00	METAL CHIP	0	5% 1/10W	
R410	l-216-022-00	METAL CHIP	75	5% 1/10W	
R411	l-216-113-00	METAL CHIP	470K	5% 1/10W	
R412	l-216-113-00	METAL CHIP	470K	5% 1/10W	
R413	l-216-295-00	METAL CHIP	0	5% 1/10W	
R414	l-216-041-00	METAL CHIP	470	5% 1/10W	
R415	l-216-041-00	METAL CHIP	470	5% 1/10W	
R417	l-216-033-00	METAL CHIP	220	5% 1/10W	
R418	l-216-045-00	METAL CHIP	680	5% 1/10W	
R420	l-216-043-00	METAL CHIP	560	5% 1/10W	
R421	l-216-043-00	METAL CHIP	560	5% 1/10W	
R422	l-216-045-00	METAL CHIP	680	5% 1/10W	
R423	l-216-295-00	METAL CHIP	0	5% 1/10W	
R424	l-216-025-00	METAL CHIP	100	5% 1/10W	
R425	l-216-033-00	METAL CHIP	220	5% 1/10W	
R426	l-216-065-00	METAL CHIP	4. 7K	5% 1/10W	
R427	l-216-085-00	METAL CHIP	33K	5% 1/10W	
R428	l-216-065-00	METAL CHIP	4. 7K	5% 1/10W	
R429	l-216-295-00	METAL CHIP	0	5% 1/10W	
R430	l-216-295-00	METAL CHIP	0	5% 1/10W	
R431	l-216-083-00	METAL CHIP	27K	5% 1/10W	
R432	l-216-085-00	METAL CHIP	33K	5% 1/10W	
R433	l-216-097-00	METAL CHIP	100K	5% 1/10W	
R434	l-216-083-00	METAL CHIP	27K	5% 1/10W	
R436	l-216-097-00	METAL CHIP	100K	5% 1/10W	
R437	l-216-097-00	METAL CHIP	100K	5% 1/10W	
R438	l-216-097-00	METAL CHIP	100K	5% 1/10W	
R440	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R441	l-216-073-00	METAL CHIP	10K	5% 1/10W	
R442	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R443	l-216-073-00	METAL CHIP	10K	5% 1/10W	
R444	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R445	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R446	1-249-417-11	CARBON	1K	5% 1/4W	F
R447	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R448	1-249-417-11	CARBON	1K	5% 1/4W	F
R449	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R450	l-216-025-00	METAL CHIP	100	5% 1/10W	
R451	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R452	1-249-417-11	CARBON	1K	5% 1/4W	F
R453	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R454	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R455	l-216-295-00	METAL CHIP	0	5% 1/10W	
R466	l-216-061-00	METAL CHIP	3. 3K	5% 1/10W	
R472	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R473	l-216-025-00	METAL CHIP	100	5% 1/10W	
R476	1-249-429-11	CARBON	10K	5% 1/4W	
R477	l-216-073-00	METAL CHIP	10K	5% 1/10W	
R478	l-216-061-00	METAL CHIP	3. 3K	5% 1/10W	
R479	l-216-295-00	METAL CHIP	0	5% 1/10W	
R480	l-216-295-00	METAL CHIP	0	5% 1/10W	
R481	l-216-061-00	METAL CHIP	3. 3K	5% 1/10W	
R482	l-216-061-00	METAL CHIP	3. 3K	5% 1/10W	

A C

· The com ponents identified by ⊠ in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
Should replacement be required, replace only with the value orginally used.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la **securite.**
Ne **les** remplacer que par une piece **portant** le numero **specifie.**

The components identified by shading and mark ⚠ are critical for **safety.**
Replace only with part number specified.

Ref. No.	Part No.	Description			Remark
R483	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R484	l-216-097-00	METAL CHIP	100K	5% 1/10W	
R485	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R486	l-216-097-00	METAL CHIP	100K	5% 1/10W	
R505	⚠1-216-349-91	METAL OXIDE	1	5% 1W	F
R506	⚠1-216-429-91	METAL OXIDE	270	5% 1W	F
R507	l-247-887-00	CARBON	220K	5% 1/4W	
R508	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R509	l-216-101-00	METAL CHIP	150K	5% 1/10W	
R510	l-216-055-00	METAL CHIP	1.8K	5% 1/10W	
⊠R511	⚠	METAL CHIP		1/4W	
R512	l-215-445-00	METAL	10K	1% 1/6W	
R513	1-216-645-11	METAL CHIP	560	0.5% 1/10W	
R515	1-216-673-11	METAL CHIP	8.2K	0.5% 1/10W	
R517	1-216-699-11	METAL CHIP	100K	0.5% 1/10W	
R518	l-215-431-00	METAL	2.7K	1% 1/6W	
R519	l-215-427-00	METAL	1.8K	1% 1/6W	
R520	l-216-073-00	METAL CHIP	10K	5% 1/10W	
R530	1-249-419-11	CARBON	1.5K	5% 1/4W	F
R531	⚠1-216-357-91	METAL OXIDE	4.7	5% 1W	F
R532	⚠1-215-880-91	METAL OXIDE	10	5% 2W	F
R533	⚠1-216-359-91	METAL OXIDE	6.8	5% 1W	F
R534	1-249-393-11	CARBON	10	5% 1/4W	F
R535	⚠1-249-389-91	CARBON	4.7	5% 1/4W	F
⊠R537	⚠	METAL CHIP		1/4W	
R538	1-249-441-11	CARBON	100K	5% 1/4W	
R541	l-249-418-11	CARBON	1.2K	5% 1/4W	F
R542	⚠1-216-357-91	METAL OXIDE	4.7	5% 1W	F
R549	⚠1-216-369-91	METAL OXIDE	1	5% 2W	F
R554	1-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R555	⚠1-215-896-91	METAL OXIDE	4.7K	5% 2W	F
R558	l-260-326-71	CARBON	680	5% 1/2W	
R559	⚠1-215-862-91	METAL OXIDE	68	5% 1W	F
R566	1-249-417-11	CARBON	1K	5% 1/4W	F
R588	l-216-105-00	METAL CHIP	220K	5% 1/10W	
R590	l-216-063-00	METAL CHIP	3.9K	5% 1/10W	
R591	l-216-061-00	METAL CHIP	3.3K	5% 1/10W	
R592	l-216-073-00	METAL CHIP	10K	5% 1/10W	
R593	l-216-049-00	METAL CHIP	1K	5% 1/10W	
R594	1-216-689-11	METAL CHIP	39K	0.5% 1/10W	
R595	l-216-073-00	METAL CHIP	10K	5% 1/10W	
R599	⚠1-215-857-91	METAL OXIDE	10	5% 1W	F
R681	⚠1-215-883-91	METAL OXIDE	33	5% 2W	F
R682	1-249-415-11	CARBON	680	5% 1/4W	F
R683	⚠1-216-356-91	METAL OXIDE	3.9	5% 1W	F
R684	⚠1-216-380-91	METAL OXIDE	8.2	5% 2W	F

< SWITCH >

S001 1-571-532-21 SWITCH, TACTIL
S002 1-571-532-21 SWITCH, TACTIL
S003 1-571-532-21 SWITCH, TACTIL
S004 1-571-532-21 SWITCH, TACTIL
S005 1-571-532-21 SWITCH, TACTIL
S006 1-571-532-21 SWITCH, TACTIL

< TRANSFORMER >

T504 ⚠1-453-141-11 TRANSFORMER ASSY, FLYBACK (NX-1600A5)
T551 1-437-195-11 TRANSFORMER, HORIZONTAL DRIVE

< TUNER >

TU101⚠8-598-039-01 TUNER BTF-WA401

< VIBRATOR >

X001 1-579-917-21 VIBRATOR, CRYSTAL
X001 1-579-917-41 VIBRATOR, CRYSTAL
x301 l-567-505-11 OSCILLATOR, CRYSTAL

****

*A-1331-246-A C BOARD, COMPLETE
****

< CAPACITOR >

C701	l-136-601-11	FILM	0.01uF	10% 630V
C704	l-162-116-00	CERAMIC	680PF	10% 2KV
C706	1-124-916-11	ELECT	22uF	20% 63V
C707	l-164-085-11	CERAMIC	0.001uF	10% 50V
C711	l-164-083-11	CERAMIC	680PF	10% 5ov
C712	l-164-082-11	CERAMIC	560PF	10% 5ov
C731	l-164-083-11	CERAMIC	680PF	10% 50V
C732	l-164-081-11	CERAMIC	470PF	10% 5ov
C751	l-164-083-11	CERAMIC	680PF	10% 5ov
C752	l-164-082-11	CERAMIC	560PF	10% 5ov
C771	l-164-083-11	CERAMIC	680PF	10% SOY
C772	l-164-083-11	CERAMIC	680PF	10% 5ov
C773	l-164-083-11	CERAMIC	680PF	10% 5ov

< CONNECTOR >

CN701 1-695-915-11 TAB (CONTACT)
CN702 *1-508-768-00 PIN, CONNECTOR (5MM PITCH) 6P
CN703 *l-564-509-11 PLUG, CONNECTOR 6P

< DIODE >

D711 8-719-911-19 DIODE 1SS119
D731 8-719-911-19 DIODE 1SS119
D751 8-719-911-19 DIODE 1SS119
D770 8-719-911-19 DIODE 1SS119
D771 8-719-911-19 DIODE 1SS119

The components identified by shading and mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite.
Ne les remplacer que par une piece portant le numero specifie.

Ref. No.	Part No.	Description				Remark
D772	8-719-911-19	DIODE 1SS119				
D773	8-719-911-19	DIODE 1SS119				
D777	8-719-109-71	DIODE RD3. 9ES-B1				
D790	8-719-911-19	DIODE 1SS119				
D791	8-719-911-19	DIODE 1SS119				
D792	8-719-911-19	DIODE 1SS119				
		< JACK >				
J701	⚠1-540-071-13	SOCKET, PICTURE TUBE				
		< COIL >				
L701	1-410-671-31	INDUCTOR	47uH			
		< TRANSISTOR >				
Q711	8-729-926-73	TRANSISTOR	2SC3271F-N			
Q712	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q731	8-729-926-73	TRANSISTOR	2SC3271F-N			
Q732	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q751	8-729-926-73	TRANSISTOR	2SC3271F-N			
Q752	8-729-119-78	TRANSISTOR	2SC2785-HFE			
Q770	8-729-119-76	TRANSISTOR	2SA1175-HFE			
Q771	8-729-200-17	TRANSISTOR	2SA1091-O			
Q772	8-729-200-17	TRANSISTOR	2SA1091-O			
Q773	8-729-200-17	TRANSISTOR	2SA1091-O			
		< RESISTOR >				
R700	1-202-549-00	SOLID	100	20%	1/2W	
R701	1-202-846-00	SOLID	470K	20%	1/2W	
R702	1-202-844-00	SOLID	330K	20%	1/2W	
R703	1-202-838-00	SOLID	100K	20%	1/2W	
R704	⚠1-216-370-91	METAL OXIDE	1.2	5%	2W	F
R706	1-202-842-11	SOLID	220K	20%	1/2W	
R710	1-202-824-00	SOLID	3.3K	20%	1/2W	
R711	1-249-405-11	CARBON	100	5%	1/4W	F
R712	⚠1-215-924-91	METAL OXIDE	15K	5%	3W	F
R716	1-249-411-11	CARBON	330	5%	1/4W	
R717	1-249-393-11	CARBON	10	5%	1/4W	F
R730	1-202-824-00	SOLID	3.3K	20%	1/2W	
R731	1-249-405-11	CARBON	100	5%	1/4W	F
R732	⚠1-215-924-91	METAL OXIDE	15K	5%	3W	F
R736	1-249-411-11	CARBON	330	5%	1/4W	
R737	1-249-393-11	CARBON	10	5%	1/4W	F
R750	1-202-824-00	SOLID	3.3K	20%	1/2W	
R751	1-249-405-11	CARBON	100	5%	1/4W	F
R752	⚠1-215-924-91	METAL OXIDE	15K	5%	3W	F
R756	1-249-411-11	CARBON	330	5%	1/4W	
R757	1-249-393-11	CARBON	10	5%	1/4W	F
R770	1-249-433-11	CARBON	22K	5%	1/4W	
R771	1-249-409-11	CARBON	220	5%	1/4W	F
R772	1-249-409-11	CARBON	220	5%	1/4W	F
R773	1-249-409-11	CARBON	220	5%	1/4W	F
R774	1-249-437-11	CARBON	47K	5%	1/4W	
R775	1-249-417-11	CARBON	1K	5%	1/4W	F
R776	1-249-409-11	CARBON	220	5%	1/4W	F
R790	1-249-417-11	CARBON	1K	5%	1/4W	F
R791	1-249-413-11	CARBON	470	5%	1/4W	F
		< VARIABLE RESISTOR >				
RV701	⚠1-241-656-21	RES, ADJ, METAL FILM 110M				
RV702	1-230-641-11	RES, ADJ, METAL GLAZE 2.2M				

****

*A-1316-146-A G BOARD, COMPLETE
****

1-533-223-11 CLIP, FUSE
4-382-854-11 SCREW (M3X10), P, SW (+)

< CAPACITOR >

C601	⚠1-136-311-51	FILM	0.47uF	20%	125V
C603	1-124-478-11	ELECT	100uF	20%	25V
C604	⚠1-162-677-51	CERAMIC	470PF	10%	125V
C605	⚠1-162-677-51	CERAMIC	470PF	10%	125V
C606	⚠1-102-050-51	CERAMIC	0.01uF		500V
C607	⚠1-102-050-51	CERAMIC	0.01uF		500V
C613	1-104-759-11	ELECT	470uF	20%	200V
C614	1-104-759-11	ELECT	470uF	20%	200V
C615	1-164-625-11	CERAMIC	680PF	10%	500V
C616	1-136-169-00	FILM	0.22uF	5%	50V
C617	1-136-169-00	FILM	0.22uF	5%	50V
C618	1-164-625-11	CERAMIC	680PF	10%	500V
C619	1-164-625-11	CERAMIC	680PF	10%	500V
C620	1-136-601-11	FILM	0.01uF	10%	630V
C621	1-129-744-91	FILM	0.027uF	10%	400V
C622	1-124-478-11	ELECT	100uF	20%	25V
C623	1-124-360-00	ELECT	1000uF	20%	16V
C624	1-124-557-11	ELECT	1000uF	20%	25V
C626	1-123-024-21	ELECT	33uF		160V
C627	1-136-601-11	FILM	0.01uF	10%	630V
C629	1-106-355-12	MYLAR	3300PF	5%	200V
C630	1-124-907-11	ELECT	10uF	20%	50V
C631	1-136-169-00	FILM	0.22uF	5%	50V
C632	1-136-169-00	FILM	0.22uF	5%	50V
C633	⚠1-162-677-51	CERAMIC	470PF	10%	125V
C634	⚠1-162-677-51	CERAMIC	470PF	10%	125V
C635	1-106-365-00	MYLAR	0.0082uF	10%	100V
C636	1-162-318-11	CERAMIC	0.001uF	10%	500V
C637	1-164-735-11	CAP, CERAMIC	1500PF		
C638	1-164-735-11	CAP, CERAMIC	1500PF		
C639	1-164-735-11	CAP, CERAMIC	1500PF		

Les composants identifies par une trame et une marque ⚠ sont critiques pour la **securite.**
Ne les remplacer que par une piece **portant** le numero **specifie.**

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Replace only with **part** number specified.

Ref. No.	Part No.	Description	Remark
C640	1-164-735-11	CAP, CERAMIC 1500PF	
		〈 CONNECTOR 〉	
CN601	*1-580-843-11	PIN, CONNECTOR (POWER)	
CN602	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P	
CN603	*1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P	
CN604	*1-564-510-11	PLUG, CONNECTOR 7P	
CN605	*1-691-135-11	PIN, CONNECTOR (PC BOARD) 4P	
CN606	*1-564-505-11	PLUG, CONNECTOR 2P	
		〈 DIODE 〉	
D604	8-719-911-19	DIODE 1SS119	
D606	⚠8-719-510-53	DIODE D4SB60L	
D607	8-719-510-48	DIODE D1N20R	
D608	8-719-510-48	DIODE D1N20R	
D609	8-719-510-48	DIODE D1N20R	
D610	8-719-510-48	DIODE D1N20R	
D611	8-719-032-13	DIODE D1NS6-TA2	
D612	8-719-510-02	DIODE D1NS4	
D613	8-719-510-02	DIODE DINS4	
D614	8-719-510-02	DIODE D1NS4	
D615	8-719-510-02	DIODE D1NS4	
D616	8-719-510-26	DIODE D1NL20	
D617	8-719-510-26	DIODE D1NL20	
D618	8-719-510-26	DIODE D1NL20	
D619	8-719-510-26	DIODE D1NL20	
D620	8-719-510-02	DIODE DINS4	
D621	8-719-510-02	DIODE D1NS4	
D622	8-719-510-48	DIODE D1N20R	
D624	8-719-911-19	DIODE 1SS119	
D625	8-719-911-19	DIODE 1SS119	
D626	8-719-110-14	DIODE RD9.1ES-B3	
D627	8-719-911-19	DIODE 1SS119	
D629	8-719-911-19	DIODE 1SS119	
D633	8-719-510-48	DIODE D1N20R	
		〈 FUSE 〉	
F601	⚠1-532-748-11	FUSE, GLASS TUBE 6.3A 125V	
		〈 FERRITE BEAD 〉	
FB601	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB602	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB603	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB604	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB605	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB606	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB607	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB608	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB609	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	

Ref. No.	Part No.	Description	Remark
		〈 IC 〉	
IC602	⚠1-810-050-11	IC POWER MODULE DM-47	
		〈 COIL 〉	
L601	1-412-533-61	INDUCTOR 47uH	
		〈 TRANSISTOR 〉	
Q602	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q603	8-729-016-15	TRANSISTOR 2SC4833MNP	
Q604	8-729-016-15	TRANSISTOR 2SC4833MNP	
Q605	8-729-924-90	TRANSISTOR 2SB1370-EF	
Q606	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q607	8-729-924-90	TRANSISTOR 2SB1370-EF	
		〈 RESISTOR 〉	
R602	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R604	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R608	1-247-893-11	CARBON 390K 5% 1/4W	
R609	1-247-893-11	CARBON 390K 5% 1/4W	
R610	⚠1-202-933-61	FUSIBLE 0.1 10% 1/2W F	
R612	⚠1-216-349-71	METAL OXIDE 1 5% 1W F	
R613	⚠1-216-349-71	METAL OXIDE 1 5% 1W F	
R614	⚠1-215-904-71	METAL OXIDE 100K 5% 2W F	
R615	⚠1-215-904-71	METAL OXIDE 100K 5% 2W F	
R616	⚠1-215-858-71	METAL OXIDE 15 5% 1W F	
R617	⚠1-215-858-71	METAL OXIDE 15 5% 1W F	
R618	⚠1-212-855-61	FUSIBLE 8.2 5% 1/4W F	
R619	1-212-853-61	FUSIBLE 6.8 5% 1/4W F	
R620	⚠1-249-379-91	CARBON 0.68 5% 1/4W F	
R621	⚠1-249-377-91	CARBON 0.47 5% 1/4W F	
R622	⚠1-249-377-91	CARBON 0.47 5% 1/4W F	
R623	⚠1-249-377-91	CARBON 0.47 5% 1/4W F	
R624	1-249-425-11	CARBON 4.7K 5% 1/4W F	
R625	⚠1-215-864-71	METAL OXIDE 150 5% 1W F	
R627	⚠1-249-377-91	CARBON 0.47 5% 1/4W F	
R629	1-249-425-11	CARBON 22K 5% 1/4W	
R630	⚠1-249-377-91	CARBON 0.47 5% 1/4W F	
R631	⚠1-249-377-91	CARBON 0.47 5% 1/4W F	
R632	⚠1-249-377-91	CARBON 0.47 5% 1/4W F	
R633	1-249-388-11	CARBON 3.9 5% 1/6W F	
R636	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R637	1-249-407-11	CARBON 150 5% 1/4W F	
R639	⚠1-202-892-91	SOLID 4.7M 20% 1/2W	
R640	1-249-414-11	CARBON 560 5% 1/4W F	
R642	1-249-421-11	CARBON 2.2K 5% 1/4W F	
R643	⚠1-215-863-71	METAL OXIDE 100 5% 1W F	
R645	⚠1-212-855-61	FUSIBLE 8.2 5% 1/4W F	
R646	⚠1-216-422-71	METAL OXIDE 18 6% 1W F	
R647	⚠1-216-425-71	METAL OXIDE 56 5% 1W F	

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Ref. No.	Part No.	Description			Remark
R648	1-249-421-11	CARBON	2.2K 5%	1/4W	F
R649	1-249-417-11	CARBON	1K 5%	1/4W	F
R650	1-249-417-11	CARBON	1K 5%	1/4W	F
R651	1-249-425-11	CARBON	4.7K 5%	1/4W	
R652	1-249-411-11	CARBON	330 5%	1/4W	F
R653	1-249-417-11	CARBON	1K 5%	1/4W	F
R654	1-249-414-11	CARBON	560 5%	1/4W	
R655	1-249-411-11	CARBON	100K 5%	1/4W	

< RELAY >

RY601 ⚠1-515-684-31 RELAY
RY602 1-515-684-31 RELAY

<TRANSFORMER >

T601 ⚠1-423-585-11 TRANSFORMER, LINE FILTER (LFT)
T602 ⚠1-423-585-11 TRANSFORMER, LINE FILTER (LFT)
T603 ⚠1-423-563-11 TRANSFORMER, CONVERTER DRIVE
T604 1-423-582-11 TRANSFORMER, FERRITE (SBT)
T605 ⚠1-423-564-11 TRANSFORMER, CONVERTER (PIT)

< THERMISTOR(POSITIVE) >

THP601 ⚠1-808-081-14 THERMISTOR, POSITIVE

< VARISTOR >

VDR601 1-810-052-21 VARISTOR
VDR602 1-810-052-21 VARISTOR

****

*1-646-641-11 S BOARD
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< CAPACITOR >

C805	1-124-903-11	ELECT	1uF	20%	50v
C806	1-137-399-11	FILM	0.1uF	5%	50v
C807	1-102-157-00	CERAMIC	560PF	10%	500v
C809	1-137-367-11	FILM	0.0033uF	5%	50v
C810	1-137-399-11	FILM	0.1uF	5%	50v
C811	1-137-399-11	FILM	0.1uF	5%	50v
C812	1-137-375-11	FILM	0.068uF	5%	50v
C813	1-124-907-11	ELECT	10uF	20%	50v
C814	1-124-907-11	ELECT	10uF	20%	50v
C815	1-124-907-11	ELECT	10uF	20%	50v
C816	1-124-907-11	ELECT	10uF	20%	50v
C817	1-124-907-11	ELECT	10uF	20%	50v
C819	1-164-070-11	CERAMIC	100PF	5%	50v

<CONNECTOR>

CN801 *1-573-979-11 CONNECTOR, BOARD TO BOARD 11P

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D800	8-719-911-19	DIODE 1SS119			
		< IC >			
IC801	8-759-084-09	IC Z8612812PSC			
		< COIL >			
L801	1-410-470-11	INDUCTOR 10uH			
		< TRANSISTOR >			
Q801	8-729-119-78	TRANSISTOR 2SC2785-HFE			
Q802	8-729-119-78	TRANSISTOR 2SC2785-HFE			
		< RESISTOR >			
R801	1-249-416-11	CARBON	820 5%	1/4W	F
R802	1-249-416-11	CARBON	820 5%	1/4W	F
R803	1-249-416-11	CARBON	820 5%	1/4W	F
R804	1-249-425-11	CARBON	4.7K 5%	1/4W	F
R805	1-249-425-11	CARBON	4.7K 5%	1/4W	F
R806	1-249-423-11	CARBON	3.3K 5%	1/4W	F
R807	1-249-425-11	CARBON	4.7K 5%	1/4W	F
R808	1-249-417-11	CARBON	1K 5%	1/4W	F
R809	1-249-441-11	CARBON	100K 5%	1/4W	
R810	1-249-437-11	CARBON	47K 5%	1/4W	
R812	1-249-417-11	CARBON	1K 5%	1/4W	F
R813	1-249-417-11	CARBON	1K 5%	1/4W	F
R814	1-249-413-11	CARBON	470 5%	1/4W	F
R815	1-249-427-11	CARBON	6.8K 5%	1/4W	F
R816	1-249-429-11	CARBON	10K 5%	1/4W	
R817	1-249-433-11	CARBON	22K 5%	1/4W	
R818	1-249-417-11	CARBON	1K 5%	1/4W	F
R820	1-249-433-11	CARBON	22K 5%	1/4W	
R821	1-249-433-11	CARBON	22K 5%	1/4W	
R822	1-249-429-11	CARBON	10K 5%	1/4W	

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*1-647-061-11 UA BOARD
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< DIODE >

CI403 8-719-109-88 DIODE RD5.6ES-B1

<CONNECTOR>

CN1401 *1-564-523-11 PLUG, CONNECTOR 8P
CN1402 *1-564-521-11 PLUG, CONNECTOR 6P

< JACK >

51401 1-750-515-11 TERMINAL BLOCK, S 3P

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Ref. No.	Part No.	Description			Remark
51402	l-750-698-11	JACK BLOCK, PIN 3P			
51403	l-750-516-11	JACK BLOCK, PIN 2P			
		‹ RESISTOR ›			
RI401	l-247-804-11	CARBON	75 5%	1/4W	
R1402	l-247-804-11	CARBON	75 5%	1/4W	
R1403	l-247-804-11	CARBON	75 5%	1/4W	
R1404	l-247-895-00	CARBON	470K 5%	1/4W	
R1405	l-247-895-00	CARBON	470K 5%	1/4W	
R1409	l-247-895-00	CARBON	470K 5%	1/4W	
R1410	l-247-895-00	CARBON	470K 5%	1/4W	
R1411	I-247-804-11	CARBON	75 5%	1/4W	
R1412	l-247-895-00	CARBON	470K 5%	1/4W	
R1413	l-247-895-00	CARBON	470K 5%	1/4W	
R1414	I-249-409-11	CARBON	220 5%	1/4W	F
		MISCELLANEOUS			
	⚠1-426-358-11	COIL, DEMAGNETIZATION			
	⚠1-451-280-11	DEFLECTION YOKE (Y21PXA2)			
	1-452-032-00	MAGNET, DISC; 10MM φ			
	l-452-094-00	MAGNET, ROTATABLE DISK: 15MM φ			
	l-452-277-00	MAGNET, BMC			
	1-573-657-11	PLUG, F-PIN			
	⚠1-751-057-11	CORD, POWER (WITH CONNECTOR)			
SP901	1-504-304-11	SPEAKER (8CM)			
SP902	1-504-304-11	SPEAKER (8CM)			
V901	⚠8-738-764-05	PICTURE TUBE (A51JUH51X)			
		ACCESSORIES & PACKING MATERIALS			
	3-756-904-21	MANUAL INSTRACTION (ENGLISH)			
	3-756-904-31	MANUAL INSTRACTION (FRENCH)			
	3-756-904-41	MANUAL INSTRACTION (SPANISH)			
	*4-039-442-01	CUSHION (UPPER) (ASSY)			
	*4-039-443-01	CUSHION (LOWER) (ASSY)			
	*4-039-550-01	INDIVIDUAL CARTON			
	4-380-340-01	BAG, PROTECTION			
		REMOTE COMMANDER			
	l-467-060-11	REMOTE COMMANDER (RM-Y117)			
	g-903-826-01	COVER BATTERY (RM-Y117)			

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